Summary Report

Study on Skills Development for the Department of Labour, South Africa

SUBMITTED TO
USAID/South Africa

SUBMITTED BY
Nathan–MSI Group
J.E. Austin
Nathan Associates

IN RESPONSE TO
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Introduction

This project was undertaken by JE Austin Associates (the technical lead) and Nathan Associates, under the Nathan–MSI and Segir–GBTI Joint Venture funded by USAID. The project team comprised Pundy Pillay (Team Leader), Lindsay Falkov (Director, *SkillsWorks*, Johannesburg), David Mullins (Conningarth Consultants, Pretoria), Edward Brooke (Research Associate, Nathan Associates) and Kate Grubb (Research Associate, JE Austin). Martin Webber and Kevin Murphy of JE Austin Associates, Washington, D.C oversaw the project.

The Skills Development Act, 1998 and the Skills Development Levies Act, 1999, represent the South African Government's commitment to transforming workplace education and training in the country. This legislation aims both to encourage increased investment by employers in the skills of their workforce and to improve the responsiveness of training delivery to skill needs in the workplace. The main elements of the legislation are the introduction of a skills development levy, revamping the ailing apprenticeship system through the introduction of learnerships and skills programmes, introducing systematic skills development planning requirements at national, sectoral and workplace levels and the creation of a new sector / industry training infrastructure through the establishment of 25 Sector Education and Training Authorities (SETAs), across all economic sectors. In addition, all training under the skills development strategy will culminate in formal credits towards or full qualifications registered on the new National Qualifications Framework (NQF), which is governed by the South African Qualifications Authority (SAQA). This training will also be formally quality-assured in accordance with SAQA requirements.

The skills development strategy consists of a three-tier governance arrangement with the Department of Labour (DoL) and National Skills Authority representing the national tier of governance; SETAs and DoL Provincial Offices a second, sector and regional, tier; and workplaces or training provider learning sites the third tier. The first two tiers of governance are expected to support the primary beneficiaries of training, employers and workers in public and private organisations and enterprises, students enrolled in occupational learning pathways in the Further and Higher education and training bands, as well as the unemployed and poor.

The purpose of this study is two-fold. First, it is to review international approaches to monitoring and evaluating training systems in a range of industrialised and developing countries with a view to deriving lessons for South Africa. Second, the study attempts to provide the South African Department of Labour (DoL) with some ideas about how it would conduct impact studies of the National Skills Development Strategy (NSDS) in the medium and long terms. In particular, this aspect of the study focuses on what the implications would be for the DoL of undertaking social cost-benefit analyses of the NSDS.

The second part of this document provides a summary of Part 1 of the study which focuses on an international review of monitoring and evaluation of training systems. Similarly, the third part is a summary of Part 2 which examines various methodologies to evaluate the NSDS. Section 4 conlcudes by attempting to draw together some possible lessons for South Africa from this two-part study.

Part 1: International Review Focusing on Monitoring and Evaluation

As stated in the introduction, the purpose of this study is to review international approaches to monitoring and evaluating national training systems and to highlight critical factors determining the success or failure of these systems.

The terms of reference for this study referred to a review of eight countries. However, in-depth analysis of eight countries was not feasible. It was agreed with USAID and DoL that, while information and analysis would include many countries, the more in-depth focus would be on a detailed case analysis of three countries: Australia, Malaysia and the United Kingdom, based on the relevance of their structure and policies to the South African skills development strategy.

Australia has a vocational training structure that closely resembles that employed in South Africa and has also introduced the best features of modern, decentralised management. Malaysia introduced a levy scheme very similar to the one used in South Africa, and it was assumed that the manner in which Malaysia monitors and evaluates training under the levy, as well as key constraints and success factors based on their experience of implementing the levy, would provide invaluable lessons South Africa. The United Kingdom was selected to specifically examine the monitoring, evaluation and performance contracting approaches and instruments that are used in the Further Education system. Information from a range of other countries in Scandinavia and Latin America was also examined, but was insufficient for the purposes of a country review (see Appendix 1A for details for contacts made and information obtained).

Section 2 of the international review entitled "Contemporary Approaches to Training System Management" examines key issues relating to the development and performance of training systems internationally. Specifically these issues relate to

- Governance,
- Strategic Management and Planning, and
- Monitoring and Evaluation.

GOVERNANCE

The 1990s saw widespread reform of training systems in search of improvements in the responsiveness of training delivery to workplace skill needs. Traditional, state run and centralised, models of vocational training governance have given way to public-private governance partnerships along with the application of standard performance management approaches. The main focus of these reforms has been on creating demand-led vocational training systems that are responsive to the skill needs of both the formal and informal sectors of the economy in order to raise the skills profile of employees and the employability of school leavers and the unemployed.

Some of the more important reforms characterising the new demand-led approach include:

- The establishment of national training authorities that allow for **public-private governance partnerships** over training systems;
- A move away from traditional manpower planning to **labour market analysis** and tracking and training needs analyses to inform training authorities and providers of current and emerging skill needs;
- **Decentralised control** over the delivery of training to improve the responsiveness of training delivery to the skill needs of industry;
- Shifting government's role in the vocational training system from providing training to **financing and monitoring** training. This shift includes new funding incentives that encourage employers to increase training in their enterprises and developing new approaches to the allocation of public subsidies to public training providers;
- Opening up access of **private providers** to public funds in order to increase competition between public and private training providers; and
- Increased emphasis on **cost sharing** between government and the main beneficiaries of training.

Two further factors are important in these models. First, along with these changes many countries have applied **standard performance-based management approaches** to their vocational training systems. Second, it must be stressed that high-level management systems and capabilities are required to support this decentralised governance model. Accordingly, its implementation usually needs to be phased in to allow for the development of the necessary systems and competence.

STRATEGIC MANAGEMENT AND PLANNING

A key feature of the management approach in the "new" decentralised, demand-led training systems involves national agencies defining the **global objectives or outcomes** expected of the training system, which provides the framework within which second tier governance agencies and training providers set their **own** objectives. Measurable indicators are attached to these objectives to enable the parties to determine whether or not these have been achieved within specified time periods. Day-to-day management responsibility for the achievement of these objectives is devolved to second tier governance agencies and training providers. Public funds are allocated towards the achievement of these objectives but financial control is devolved to lower tier agencies and providers in a manner that is commensurate with their increased autonomy.

Australia provides an excellent example of strategic management and planning within a vocational training system. The national Vocational Education and Training (VET) plan presents a **limited number of system-wide objectives** for the training system. Each objective has a clearly defined **performance indicator** attached to it and a clear statement of what it is that the indicator is measuring.

The way in which planning for the Australian vocational training system is organised is also instructive; particularly in its organisation across the different levels of governance. The National Authority, a Council of Federal and State Vocational Training Ministers, and the Australian National Training Authority (ANTA) are responsible for setting the national objectives of the system. These objectives must inform independent planning processes in each State Vocational Training Authority and in Industry Training Advisory Bodies (ITABs). The State Authority

objectives in turn provide the guidelines within which Technical and Further Education (TAFE) Colleges, in each State, must plan.

While each State controls its own vote for vocational training, these funds can only be accessed once agreement between the State and ANTA has been reached on the targets set against each of the national objectives. Accountability and performance are "enforced" through monitoring and evaluating the objectives, targets and the performance indicators attached to each. In particular, there are financial rewards for States that reach these targets and penalties for those that fail to do so, and these incentives cascade down to the provider level. Day-to-day management is the prerogative of the State authorities and training providers. Training providers decide on their training offerings based on local industry needs and the targets they are expected to meet.

This management approach has also been adopted in New Zealand by the Ministry of Education in order to manage the Polytechnics and in the UK by the Further Education Funding Council, albeit under less complex "unitary" governance systems.

The approach also allows the authorities directly responsible for allocating funds to training to increase training provider performance - accountability and responsiveness to workplace training needs - by attaching performance requirements to allocation formulae. This usually involves allocating funds based on provider or enterprise training plans that set-out the main objectives and related targets of the training provider, and either paying on achievement of objectives or increasing or reducing budgets in future years according to the degree of success in reaching these targets.

However, it is imperative that training objectives and related indicators are carefully defined. Firstly, objectives and indicators must include effectiveness, efficiency and equity objectives. Obviously, achieving one's objective "at any cost" is unacceptable. Secondly, the indicators chosen must be measurable within the resources, timeframes and MIS systems available. Thirdly, the indicators must be clearly understood by all parties concerned. Fourth, the actual targets set are probably best set through a "negotiated" process, which allows both lower level and national authorities to reach agreement on appropriate target levels. Fifth, the objectives, indicators and targets set need to be evaluated as a package and possible unintended consequences assessed.

Multi-Tier Model of Governance– Australia

Tier 1: ANTA + Council of Federal & State Ministers
Sets system-wide objectives; responsible for strategic planning; development of performance indicators linked to objectives.

Tier 2: State Vocational Training Authorities + ITABs
State planning and sectoral planning respectively. Set targets against national objectives. Oversee providers.

Tier 3: Training Providers: TAFE Colleges

MONITORING AND EVALUATION

Performance based management systems rely heavily on the appropriate design and effective implementation of monitoring and evaluation systems. While day-to-day management of training is the responsibility of each training authority as well as providers and enterprises, accountability for the use of public funds and achievement of the system's goals is realised through proper reporting by and evaluation of the agencies concerned.

The study distinguishes between evaluating the *performance* of training systems and *impact* evaluations. The former refers to "recurring" evaluations that are structured directly into the performance management system and are used to regularly monitor and evaluate the achievement of certain "lower order objectives". Impact evaluations, on the other hand, generally do not lend themselves to this type of ongoing evaluation, since the techniques required to undertake the evaluation must be based on formal studies of a sample of the population under review. Examples of both types are illustrated in the shaded sidebars.

On the basis of this distinction between evaluating the performance of training systems and impact evaluations, it is possible to create an evaluation matrix that logically links the *objectives* of the system or other tiers of governance with the *indicators* and related *performance levels* or *targets* attached to each indicator. In addition, the *information* requirements and *analytical techniques* to be used to carry out the evaluation must be specified. In this way it is possible to develop a "*performance profile*", which is divided into "*standard performance indicators*" and "*complex performance criteria*".

Monitoring and Evaluation: Performance of Training Systems - Some Examples

- Placement rates of students or unemployed persons
- Analyzing training agency expenditure and range of training costs to monitor efficiency levels
- Enrolment rates by various categories: effort level, age, gender, education level

Impact Studies

Measures
- Impact of training on graduate income;
- Impact of training on individual workplace performance;
- Impact of training on overall enterprise or organisation performance;
- Relationship between costs and benefits of training.

Instruments
- Cost-benefit analysis;
- Rate of return analysis;
- Other survey-based instruments, e.g. econometric modeling;
- Cost-effectiveness studies

Goals/Principles
- Equity
- Efficiency
- Effectiveness

Evaluation Methodologies

The paper also reviews a range of evaluation methodologies including the World Bank Training Impact Studies in Colombia, Indonesia, Mexico and Taiwan (1995) and Malaysia (1995 &1997). It points to the importance of these firm surveys for the South African Skills Development Strategy because they provide some pointers towards the kinds of monitoring and evaluation that need to be undertaken in the medium to longer term in this country.

For instance, the MITP survey provided information on and analysis of, inter alia, the following important issues, using formal survey and econometric modelling techniques:

- Incidence of training in manufacturing;
- Incidence of training by sub-sector;
- Internal and external sources of training;
- Sources of training by firm size;
- Number of workers trained by firm size, by industrial sector, by skill group;
- The relative importance of the determinants of training (firm size, education level, skill level, gender, unionisation)
- Estimates of the impact on productivity of training, including wage outcomes; and
- Detailed analysis of training policies.

Table 1. Example of a Skills Development Performance Profile

Objective	Performance Indicators		What it is measuring	Analytical Technique	Information Required
	Standard Indicator	Complex Indicator			
Effectiveness Objectives & Indicators					
1. Improving the employability of South African students and unemployed people through training	Placement rates		Numbers of non-employed learners entering learnerships that are placed in permanent jobs x-months after completion of training	SETA's & provincial offices have learner tracking systems in place	Learner enrolments, completion and placement data
2. Contributing to improved workplace performance and efficiency through training	2.1 Learner & employer satisfaction rates with the quality & relevance of training	2.2 Measures of the productivity effects of training in the workplace	2.1 Learner & employer satisfaction with training programmes 2.2 The productivity impact of training	2.1 Regular surveys of enterprises undertaking training for their workers. 2.2 Formal sample based studies.	
3. Increasing the access of students and the unemployed to education and training	Enrolment rates of students and the unemployed in learnerships		Percent of students and unemployed who become enrolled in a training programme	Recording of enrolments broken down into various categories.	
4. Supporting the establishment of viable small and micro enterprises	No. of learners who established a small/micro enterprise after training		The success of the training in providing learners with relevant entrepreneurial skills	Graduate follow-up surveys	Percent of training programmes which develop entrepreneurial skills, percent of learners from these programmes who establish a small/micro enterprise.
Efficiency Objectives & Indicators					
1. Maximising the value of levy revenue expenditure	Cost / learner enrolled Cost / graduate		The efficiency of levy expenditure per input The efficiency of levy expenditure per successful output	Analysis of cost, enrolment and success rate data	Relevant cost categories and information. Enrolment and completion rate data.
Equity Objectives & Indicators					

The study also describes what is involved in a number of different types of survey-based "training effectiveness techniques including tracer studies, reverse tracer studies, enterprise surveys, household surveys and longitudinal surveys.

The paper draws attention also to the growing importance of formal performance contracts between training authorities and implementation agencies, particularly in Australia, New Zealand and the United Kingdom.

Emphasis is placed also on the increased application of formal quality management systems to education and training systems. These represent particular approaches to performance management, but with special emphasis on the quality of learning provided. One approach to applying quality management to a training environment involves generating a vision and mission, or set of objectives, for the organisation or particular training programme, that is agreed by all stakeholders. The mission statement comprises several quality *strands* each of which leads to various quality pointers. Each quality pointer has a number of good practice indicators attached to it. These indicators must be discussed in workshops with relevant stakeholders in order to jointly agree measurable and verifiable pointers for these indicators. It is these verifiable pointers that are then used to develop evaluation instruments to collect qualitative and quantitative data for the various evaluation phases. Such quality evaluation systems, however, require well-developed and functioning management information systems.

Finally, the Monitoring and Evaluation section presents a sample of indicators applied to the training environment. A summary of these indicators is provided in Table 2 below. Following the Skills Development Profile developed earlier; the distinction is made here between Standard Performance Indicators and Complex Performance Criteria.

Table 2. Indicators—Types and Examples

Type	Examples
A. Standard	
A1. General Effectiveness	• Numeracy and literacy targets • Enrolment rates by programme and level of learning • Completion rates • Placement rates
A2. Company Level Effectiveness	• Learner and employer satisfaction rates • Company participation rates in levy-grant scheme • Training exp. as % of total remuneration • Training costs as % of total remuneration
A3. Efficiency	• Unit costs of training • Training capacity utilization
A4. Equity	• Key indicators broken down by gender and other target group categories
A5. System Capacity	• Financial management and budgeting capacity • Management information system capacity • Planning and evaluation capacity
B. Complex Performance Criteria	• Impact of training on absenteeism and labour turn-over • Income and employment effects of training • Productivity effects of training

Section 3 draws attention to two key issues in vocational education and training reform that are highlighted in the most recent literature, namely 'reorganising to facilitate reform' and 'encouraging private providers'.

Reorganising to Facilitate Continual Reform

Fragmentation because of the involvement of multiple government agencies and the difficulty of obtaining timely inputs from employers and trainees make it hard to ensure efficient and accurate feedback to VET suppliers and quick reforms in response to this feedback. Sometimes the slow responses require government intervention to spur reform. This has been evident in many countries including Korea, Malaysia, Chile and most recently and conspicuously, Australia.

In the early 1990s, Australia's efforts to transform its system into a cost-effective one responsive to changing labour market conditions comprised four sets of measures:

- Combining the relevant government agencies into one body at the federal level for more coherent policymaking and allocation of public funds, namely the creation of a single Department of Education, Employment, and Training.
- Ensuring employers' and workers' participation in policy setting at the federal and state levels, through the establishment of the National Training Authority (ANTA). ANTA is "owned" by the government (federal and state), employers and workers.
- Shifting some of the financial burden of VET investments onto the beneficiaries, including the introduction of student fees and 'training wages'.
- Ensuring competition in provision so that the supply is cost-effective and relevant, including competitive bidding among training providers (public and private).

Encouraging Private Providers

In recent years, governments in many developing and transition economies have come to recognise that a healthy private supply of vocational training is good for both labour market efficiency and for budgetary reasons. Key factors that have been identified for the success of private sector provision of training include i) clear and lenient laws for the establishment of private providers; and ii) balanced funding formulas.

The study extracts from the international literature some of the factors critical for the success of training systems as well as the constraints inhibiting systems.

The following key factors appear to be critical for the success of training systems:

- Access to and the quality of basic education—the educational profile of the workforce.
- Setting clear training programme objectives and meeting these.
- Strong stakeholder support for training programmes.
- Levels of public sector investment in training and the manner in which public funds are allocated to training.
- A competent instructor core.
- Effectively communicating the objectives of national training strategies and information on how stakeholders are expected to participate in the strategy.

- On the other hand, key constraints on effective vocational education and training systems include the following:
  - — Inadequate financing
  - — Incomplete information
  - — Fragmentation of systems
  - — Poor communication with stakeholders
  - — Weak instructional capacity
  - — High labour turnover.

COUNTRY REVIEWS

Section 4 presents reviews of the VET system in three countries: Australia, Malaysia and the United Kingdom.

Australia

It is possible to identify three sets of factors that have been instrumental in the development of Australia's modern and successful VET system. These factors relate to the development of:

- Key institutions;
- Appropriate strategic management and planning; and
- Appropriate performance measures.

The key institutions at the national level are ANTA and the Council of Ministers; at the state level, the State Vocational Training Authorities and the ITABs; and at the provider level, the TAFE colleges.

Another key institution is the National Centre for Vocational Education and Research (NCVER). NCVER is a registered company, owned by Australian ministers responsible for vocational education and training. Managed by a board of eight members who represent business, trade unions, training authorities and governments, its activities include: undertaking and encouraging research and evaluation; collecting and disseminating TAFE and other VET statistics; disseminating VET information through ongoing projects, workshops, etc; and providing research and implementation assistance on a commercial consulting basis.

With respect to strategic management and planning, within the multi-tier model of governance, effective and co-ordinated planning takes place between the respective agencies at the national, state and provider levels.

Key performance measures (eight) have been developed in line with (five) overall objectives of the National Strategy for Vocational Education and Training (see Table in main document). In addition, various indicators have been developed for monitoring and evaluation at the national, sectoral and provider levels. It is possible to distinguish between 'soft' (easier to measure) and 'hard' (more difficult to measure) indicators at each level.

Finally, this section points to three further lessons that can be derived for developing countries from the Australian experience. The first is that expanding training without making the necessary institutional changes rarely works – system reform must be coupled to the development of sound institutions. Second, the links with the labour market must be predominant. In many countries a tension exists between achieving educational objectives and achieving labour market objectives. The solution in Australia was to amalgamate the players into a single entity, the ANTA, and at the political level to establish a single national ministry for employment, education

and training. Third, VET financing should support market forces through, inter alia, the introduction of cost sharing, competition amongst suppliers, and ensuring a greater role for industry in the development of training standards, assessment procedures and accreditation.

Malaysia

Given the limited role of public training institutions in retraining workers and upgrading their skills, the government implemented two training schemes – Double Deduction Incentive Training and the Human Resources Development Fund (funded through company levies and matching government grants)– to encourage companies to meet their own skill needs.

The key features of training in Malaysia are can be summarised as follows:

- ***Firms under-invest in training.*** Only 21% of firms in manufacturing provide formal training. Most firms cited mature technology, which has low skill requirements, as the main reason for doing little training.
- ***Employers play a key role in skills development.*** Notwithstanding the conclusion that firms under-invest in training, employers provide in service training to more workers than traditional vocational and technical institutions.
- ***The private sector is the most important source of training.***
- ***Technology shapes the skill requirements of employers***. The survey showed that firms are more likely to train when they are large, employ an educated work force, invest in R&D, possess technology or know-how licences, have foreign capital participation, use quality control methods, and exposure to foreign markets.
- ***Training raises firm-level productivity.*** Firms that train, on average, are about 32 percent more productive than firms that provide employees with no training.
- ***Small and medium enterprises benefit most from training.*** The productivity impact for small and medium firms is about 32 and 29 percent respectively, compared to 12 percent for large firms.
- ***Firms that train also pay higher wages.*** Employers that provide training pay wages that are 6 percent higher on average.
- ***The Double-Deduction Incentive for Training Scheme (DDIT) is ineffective in inducing training***. It has been used primarily by MNCs, joint-ventures, and larger firms who, arguably, were training already. For these firms, the DDIT scheme meant sizeable windfall gains; for firms that provided little or no training, the DDIT scheme failed to induce employers to begin, or increase provision of, training.
- ***HRDF is effective but non-compliance is significant.*** The HRDF provides firms with different schemes to flexibly organise their training efforts and upgrade their training systems. However, non-compliance is high, with as many as 27 percent of eligible firms not registered with, or contributing to, the HRDF.

Indicators used in the Malaysia Industrial Training and Productivity survey include the following: the number of hours of training per employee; the costs of training; placement rates of unemployed "graduates"; wage effects of training; firm-level efficiency; productivity; and enterprise training levels by industry / sector.

The following are some key observations that can be gleaned from the literature on the Malaysian system:

- Formal training is not widespread even in a rapidly industrializing economy.
- Tax incentives have been given to firms that would have trained anyway.
- A well-run rebate scheme has increased training only modestly.
- Private providers are the most common external source for employer-sponsored training.

United Kingdom

Most of the literature that the study was able to obtain related to the Further Education System rather than to the UK training system. Nevertheless, there appear to be some important lessons to be drawn from that experience.

First, the UK FE system follows a decentralised model of governance (see shaded sidebar).

Second, a vital feature of the UK system is the accountability strand which runs throughout the system from the provider level to the FEFC which is ultimately accountable to the Ministry of Education. Third, collaboration is an important feature of the system. The FEFC collaborates with a variety of partners, and has developed local lifelong and other types of strategic partnerships. This is used as a means of coping with high training demands and reducing the impact of inequalities between colleges. Fifth, The FEFC has formulated a quality improvement strategy to support colleges in raising the standards of their work. This includes asking colleges to set targets for student retention; publishing benchmark data; establishing a quality improvement unit; re-inspecting unsatisfactory systems; and, dissemination of good practice.

Multi-tier Model of Governance—The United Kingdom

Tier 1:Ministry of Education
Policy Development

Tier 2: Further Education Funding Council (FEFC)
Strategic planning (national); allocation of public funding; assessment of quality; ensuring adequate provision

Tier 3: FEFC Regional C ommittees
Regional planning and monitoring.

Tier 4: Colleges
FET providers. Develop college plans.

Part 2: Methodologies for the Appraisal of the National Skills Development Strategy

This study explores the usefulness and feasibility of a range of economic techniques used to evaluate the impact of training and educational investment. The greater part of the paper focuses on social cost-benefit analysis (CBA). However, CBA is a very narrowly based technique which only takes into account the direct effects of a program or project. Policymakers may prefer to know about the secondary impacts of their decisions. To analyse the broader implications of a program or project, economic analysis techniques other than CBA are also required. This study examines briefly the advantages and limitations of three alternative techniques to CBA.

SOCIAL COST BENEFIT ANALYSIS (CBA)

For both governments and individuals, the choice between different ways of investing resources rests to a great extent on an evaluation of the costs and benefits associated with the investments. The alternatives will differ as to the magnitude of the costs that must be incurred, the expected benefits that will be generated, the time scale of both costs and benefits, and the uncertainty or risks surrounding the project. Cost-benefit analysis is a technique by which these factors can be compared systematically for the purpose of evaluating the profitability of any proposed investment.

An investment is considered a profitable use of resources for the individual or society as a whole when the expected benefits exceed its costs. Thus, in choosing between alternative investments, individuals or governments try to evaluate both costs and benefits and identify the investments that will achieve the greatest possible benefit in relation to cost.

The technique of cost-benefit analysis has been developed to make this evaluation as systematic, reliable, and comprehensive as possible and to eliminate the need for guesswork, hunch or intuition. ***Cost-benefit analysis is an aid to judgment, however, not a substitute for it, since future costs and benefits can never be predicted with certainty, and measurement, particularly with respect to the likely benefits of a project, can never be completely precise***. Therefore, judgment must be used in the economic appraisal of investment projects. The value of cost-benefit analysis is that it provides a framework for evaluating both the magnitude of the costs and the benefits, and their distribution over time. Such a framework allows the judgments that must be made in assessing the likely yield of an investment to be explicit rather than implicit and possibly vague.

For example, judgments must be made about the ***real value of the resources*** to be used in an investment project since their real value may not be fully reflected in their market price because of distortions in the market, such as exchange controls or government control of wages. Judgments of this type can be incorporated into the appraisal by means of *shadow prices*, which are intended to reflect the real value of resources to the economy in the light of the social and economic objectives of a country. Shadow prices represent the weight given to different objectives, for example to future growth as opposed to present consumption.

All cost-benefit analyses use discounted cash flow techniques to compare the discounted present value of both costs and benefits, and to determine whether the benefits accruing from an investment project will be greater than the costs when both are measured in terms of present values.

What is needed for such an appraisal is a convenient summary statistic that expresses the relationship between costs, benefits, and their distribution over time. This information can be expressed in three ways, which yield the following investment criteria: the *benefit-cost ratio*, which is the ratio of the sum of discounted future benefits of a project and the discounted value costs; the *net present value*, which is the value of the discounted benefits of a project minus the discounted value of its costs; and the *internal or economic rate of return*, which is the rate of interest that equates the discounted present value of expected benefits and the present value of costs.

The evaluation of projects is often a difficult task since costs and benefits do not occur only once but appear over time. Furthermore, costs and benefits are often hidden, making them hard to identify; moreover, they are also frequently difficult to measure. The same problems occur when the decision-maker has to make a choice between a number of mutually exclusive projects intended to achieve the same goal via a number of different routes. These problems are not limited to capital projects; they also occur when decisions have to be made regarding the merits of current expenditure programmes.

The introduction of a human investment program such as the SETA Programme would contain economic costs and benefits to society. The decision-maker (in this case, the government/Department of Labour) should therefore determine what should be considered a benefit of and what a cost of the skills development strategy, from both the individual standpoint and that of society in order to implement and manage a human investment program efficiently.

Costs and Benefits of a Typical Human Investment Programme

Table 3 shows entries first for the individuals receiving the human capital investment, then for all others in society, and finally for the sum of the two.

Table 3. Benefits and Costs of a Human Investment Program

	Individual	Others	Society
Benefits			
Increase in earnings after tax	x		x
Future increase in taxes paid		x	x
Non monetary satisfaction	x		x
Costs			
Tuition costs	x		x
Costs of bursaries		x	x
Higher living expenses	x		x
Earnings foregone after tax	x		x
Taxes foregone		x	x
Transfer payments foregone	x	x	

In this way a distinction is made between those individual benefits and costs that reflect net social gains and losses from those that reflect only transfers from or to other members of society.

The first two items in the table record the future increase in income of the individuals in whom the investment is being made. For this calculation individuals are assumed to be paid what they are worth in the market place – hence if their income rises, it is assumed that this reflects their increased productivity, and that is a benefit of the human investment program. But individuals do not reap all of the benefits of their greater productivity: since they pay higher income taxes on their higher income, individuals gain the benefit reflected by future after-tax income increases (1), and other members of society gain the benefit reflected in future income tax increases (2).

The next item is non-monetary satisfaction, which shows that education, training, or human capital investment is not valued solely for its impact on income. Education may enable individuals to get jobs they like, even if those jobs do not pay any more than the jobs they would have had without the training. In this case the individuals are clearly better off, and since nobody is worse off, society gains as well, even though the form of the payment is in (non-monetary) units of enjoyment instead of money.

On the cost side, the most obvious one is the explicit amount paid for education/training by the students (tuition, 4) and by others (bursary costs, 5).

These payments measure the training institution's resource cost of providing the education. To this is added the higher living expenses, if any, incurred when students live away from home (6), another resource cost.

The next three items refer not to explicit costs but to opportunity costs. When individuals attend educational institutions, they may have to give up their job or at least reduce their working hours. They sacrifice current earnings to get an education, and these current earnings reductions are sacrifices in income to the individual and consumption goods to society just as much as the explicit out-of-pocket costs. Hence item 7 refers to inclusion in individuals' costs their loss of earnings after tax, and item 9 includes any losses in transfer payments, such as public assistance or unemployment insurance when they attend school. Others in society give up the benefits of taxes; students would have paid if they had opted not to be trained/educated. Thus they lose the taxes students would have paid on foregone earnings (item 8), but then they gain the transfer payments foregone (item 9).

Limitations of CBA

The limitations of cost-benefit analysis itself must also be recognized. At the practical level, major empirical problems arise in such areas as: identifying a suitable range of outcome categories and estimating effects within each; finding suitable 'shadow prices' with which to value benefits, particularly those measured in physical units (e.g. employment rates, crime rates); identifying displacement and externalities; establishing the appropriate discount rate to use to aggregate across time; and establishing and valuing the costs associated with the intrinsic uncertainty of project outcomes (conceived, for example, as the potential variability of net benefits around 'best estimates'). An appropriate response to this range of problems is not to ignore them, but rather to bring to bear on them whatever information is to hand (e.g. using the resource costs of imprisonment as a guide to the value of reductions in criminality) and, when that information is particularly weak, to estimate the sensitivity of net benefits to alternative assumptions about key imponderables, such as the social discount rate or shadow prices for non-

economic benefits, rather than either making unique arbitrary assumptions or excluding them altogether.

Cost-benefit analysis is aimed at decision-making in respect of projects to be undertaken in the future and therefore involves projections and assumptions regarding future developments. It is therefore crucially dependent on the availability of reliable data.

CBA falls within the ambit of what economists call 'partial equilibrium analysis' and is a technique that in its standard form takes into account only the direct impact on the immediate sphere of influence of the project. As discussed later, general equilibrium analysis as embodied in Input-Output models and Social Accounting Matrices are more efficient to evaluate the broader consequences of projects.

A further objection to cost-benefit analysis runs along the lines: economic efficiency is all very well, but training should be assessed on other criteria as well. Alternative objectives include the distributional, the educational and the fiscal. For example, a training programme may help the disadvantaged even if it is a loss for the economy as a whole, and this may be regarded as a sufficient merit for it to be supported. Or, training may contribute to personal development by encouraging young people who would otherwise have left school to stay on, learn more and enjoy more and better personal development, quite apart from any associated economic benefits. Or, again, a training programme's effect on public revenues, local activity, etc., may be politically important even when it has no efficiency or equity effects to speak of.

The need to expand the range of evaluation criteria is important. To some extent cost-benefit analysis can deal with the need, to some extent it cannot. The area of its competence overlaps with distributional issues, while the area of its unsuitability concerns educational ones. Cost-benefit analysis has found no ready way to include purely educational objectives and outcomes; and it excludes strictly political objectives from consideration.

Cost-benefit analysis can in practice accommodate consideration of the distributional effects of training in two ways. The first is to calculate net benefits for different groups of participants. For example, cost-benefit analysis of training programmes in the US has found that net benefits were highest for adult males, followed by adult females, while net benefits for youth were actually negative.

More pertinent is the degree to which the programme has at least benefited its participants, whether or not it has benefited the economy as a whole. Cost-benefit analysis addresses that issue by distinguishing benefits to participants from those to the rest of the economy.

Cost-Benefit Analysis and The National Skills Development Strategy

The costs and benefits of a SETA Programme can be defined as follows:

Costs

While the calculation of training costs is relatively easy; it is more difficult to decide which cost items to include in the analysis, as there is still no generally accepted procedure for determining costs that are easy to use and likely to be accepted.

The costs of a particular SETA Programme can be defined as the total funds that are paid by the Department of Labour and by businesses in a specific time period to a specific SETA. These costs therefore include the overheads to operate the SETA, the direct cost to present the various training courses, the compensation for the participants, and the extra costs incurred by businesses in order to comply with the new payroll tax and the SETA Programme. (From the perspective of

business, costs would be seen as the cost of the new tax, plus other costs of compliance.) It is assumed that such a SETA would not conduct training itself but rather administer the training program.

The acquiring of capital assets by a SETA, for instance, buildings, furniture and computers should be costed according to normal accounting practices such as the depreciation of assets.

Five categories of costs can be identified in any training program:

Direct costs

These are costs directly associated with the delivery of the learning activities. They include course materials (reproduced or purchased), institutional aids, equipment rental, travel, food and other refreshments, and the instructor's salary and benefits.

Such costs are so directly tied to the delivery of a particular program that if the program were cancelled the day before it was planned to conduct it, such costs would not be incurred.

Indirect costs

These costs are incurred in support of learning activities, but cannot be identified with any particular program. Even if the program were cancelled at the last minute, such costs could not be recovered. Examples would be costs for instructor preparation, clerical and administrative support, course materials already sent to participants, and time spent by the training staff in planning the program's implementation.

Development costs

All costs incurred during the development of the program are included in this category. Typically, they include the development of videotapes and computer-based instructional programming, design of program materials, piloting of the program, and any necessary redesign. This category also includes the cost of the front-end assessment, or that portion of the assessment directly attributed to the program. In addition, the costs of evaluation and tracking are included.

If a program is to be implemented for a few years, the cost is often amortized over that period. For example, one-third of the development cost may be charged off in the first year of implementation, one-third in the second year, and one-third in the last year. Otherwise, there is a real "bulge" in the budget, because of development costs during the first year.

Overhead costs

These costs are not directly related to a training program, but are essential to the smooth operation of the training department. If audiovisual equipment has been purchased specifically for a department, there is a cost to maintain that equipment. Some portion of that annual cost should be charged to the various training programs. If classroom space is available, there is an overhead cost for supplying heat and lighting. The cost of supporting that space for days when the classroom is used for particular courses should be charged to those programs.

Compensation for participants

These costs comprise the salaries and benefits paid to participants for the time they are in a program. If the program is two days long, salaries and benefits for participants for those two days are costs of the program.

Benefits

The benefits of the SETA Programme should be similar to the benefits of human resource programs in general. The benefits of training are gained by individuals, by enterprises in particular and by society in general.

Individual benefits include increased earnings, improved prospects for occupational mobility and non-monetary satisfaction. In addition, it is generally acknowledged that training does bring returns in the areas of:

- Productivity improvements;
- Greater workforce flexibility;
- Savings on material and capital costs;
- A more motivated workforce; and
- Improved quality of the final product or service

For purposes of CBA analyses the benefits of training programmes can be considered in three categories:

- Increased revenue;
- Decreased or avoided expenses; and
- Intangible benefits.

Increased revenue benefits include increased output. Decreased or avoided expenses include improved quality measured by reduction of scrap, absenteeism, inaccuracy, accidents and wasted time or materials.

Intangible benefits are those benefits that are of value but are very difficult to quantify such as employee flexibility and improved morale.

There is ample evidence that training in the workplace also contributes to the well-being of the community at large. For instance, a general benefit accrues to the community from a better-educated workforce in the form of:

- Greater Social Cohesion;
- Enhanced environmental awareness;
- Improved health; and
- Improved quality of life for individuals.

A summary of the benefits and costs for the various stakeholders in the economy is provided in Table 4.

Table 4. Benefits and Costs of a Training Program

	Individual	Business	Other	Total Society
Benefits				
1. Increase in after-tax remuneration	✓			✓
2. Future increase in income tax			✓	✓
3. Increase in net profits after tax:				
- Increased revenue		✓		✓
- Decrease or avoided expenses		✓		✓
- Intangible benefits		✓		✓
4. Future increase in company tax			✓	✓
5. Benefits to community:				
- Greater social cohesion			✓	✓
- Enhanced environmental awareness			✓	✓
- Improved health			✓	✓
- Improved quality of life			✓	✓
Costs				
6. Direct costs		✓		✓
7. Indirect costs		✓		✓
8. Development costs		✓		✓
9. Overhead costs		✓		✓
10. Compensation for participants		✓		✓

Only those benefits that can be easily identified and quantified should be included in a CBA.

When benefits can be computed in terms of Rands, one has to go through the process of adding up the derived benefits. That Rand amount is then divided by the total Rand cost of the program. The result is the cost-benefit ratio for the course.

For example, if the total benefits of a program were R50 000 and the total costs were R20 000, then the cost/benefit ratio would be 2:5. Some people might prefer to say that the total return of the program was R50 000, while the investment was R20 000, so the return on investment was 2:5. However, the formula is expressed, the company would have received R2.50 for every Rand spent on the training program.

ALTERNATIVE EVALUATION TECHNIQUES

The types of cost-benefit analyses described above typically only account for effects on persons and markets directly affected by the project. This approach, referred to by economists as "partial equilibrium" analysis, considers supply and demand relationships in one or a few isolated markets. Such analyses assume that other markets are either unaffected by a project, or that any effects in these markets are unimportant for the purposes of net benefit estimation.

Other macroeconomic models recognize that many economic sectors are interrelated, in terms of competing for inputs (e.g. raw materials, energy, labour), providing competing goods or services, or providing complementary goods or services. Macroeconomic tools can be used to assess these types of "ripple" effects on a region's or nation's economy. Macroeconomic models can also provide decision-makers with other types of information such as the influence on tax revenues, employment, productivity, competitiveness and new investment.

These tools include two "general equilibrium" approaches: Input-Output models and computable general equilibrium (CGE) models. Unlike partial equilibrium analysis, these models attempt to capture the interactions of a project's direct and indirect impacts throughout an economy. The Social Accounting Matrix (SAM) is a third type of approach that can be applied in a project of this nature. These differ from Input-Output and CGE models through their focus on social rather than economic criteria. Although much more comprehensive, the SAM is based on the same principles as the conventional Input-Output Table and to some extent is a logical extension of it. The SAM however, differs from the Input-Output table in a few important respects. Besides information on the inter-dependence between the different sectors of the economy, which is also part of the Input-Output Table, the SAM also includes detailed information on the income and spending patterns of households. The SAM therefore lends itself much more usefully to quantifying the income distributional effect of various institutions and income categories of a specific development initiative such as the SETA Programme.

The critical limitations of these macroeconomic models are as follows:

- Constructing macroeconomic types of models is time-consuming, data intensive and costly, but they are the only way to comprehensively address the secondary economic impacts of projects;
- A shortcoming of both Input-Output models and SAMs is that they provide only a "snapshot" view of the economy for the time period that data were gathered and the model constructed. Thus, these models do not typically account for changes in technology that are likely to result from changing market conditions; and
- While CGE models can be useful tools for policy analysis, model development, in many instances, may not be feasible due to data requirements and the high costs involved. In addition to developing an appropriate Input-Output matrix, CGE models require that a considerable amount of data on national accounts, trade, and other factors must also be collected.

In the discussion of the three relevant macroeconomic models and CBA, it might seem as if the analyst has a choice of completely different models, each with its individual advantages and disadvantages. However, these models are not independent, but to a large extent are extensions or variations of each other. The models are in some instances also linked in that the output of one model forms the input of the other. In order to ensure that the eventual results of the analysis would present the full economic impact of the project, these models should therefore be used in a complementary fashion where possible. A cost-benefit analysis is indispensable to such macroeconomic models, as it will indicate the basic financial and economic parameters and viability of the program or project.

Due to the complexity, the data intensiveness and the expertise needed to develop the macroeconomic models it is probably not advisable that these models should be developed in the initial stage of the appraisal of the SETA Programme. It is therefore advisable that preference should be given to standard social cost-benefit analysis as an economic tool to evaluate the effectiveness of the SETA Programme.

Lessons for South Africa

Both parts of the study provide important lessons for and pointers to the way forward with the NSDS particularly with respect to the monitoring and evaluation of training systems. These possible lessons are listed below together with other relevant observations.

GOVERNANCE

a The international experience suggests that decentralised, multi-tier models are preferable to centralised governance models based almost entirely on government planning and provision.

b In these decentralised models there are clearly defined roles and lines of accountability for each level of government, national agencies and training providers.

c In such models, there is a newly-defined role for government which emphasises its financing and monitoring roles rather than its provider role. At the same time, there is a growing role for the private sector in governance and training provision.

d An important feature of successful training systems is the thread of accountability which runs throughout the system and is enforced in some cases through the implementation of performance contracts between governments and national agencies and between the latter and training providers.

STRATEGIC PLANNING AND MANAGEMENT

e Modern training systems are characterised by effective and co-ordinated planning between the various levels of the decentralised model.

f Such a planning process involves defining (a limited number of) global/systemic objectives, with clearly-defined, measurable indicators attached to each objective.

INSTITUTIONS

g The success of training systems depends crucially on the development of sound and efficient institutions at each level. The relative success of the Australian and UK models is due in no small measure to the role played by institutions such as the ANTA and the FEFC.

STAKEHOLDER INVOLVEMENT

h For modern training systems to perform effectively it is essential to ensure the full participation of all stakeholders including in particular, employers, employees and training providers. Such involvement should extend to their participation in key institutions such as the national skills development agency and in negotiations around objectives, targets and indicators.

MONITORING AND EVALUATION

i Appropriate and effective monitoring and evaluation systems are vital for the proper assessment of training systems.

j It is important to distinguish between "recurring evaluations" (easier to undertake, more frequent) and "impact studies" (more complex and costly). Decisions have to be taken about which of these are possible in the short and long terms; which evaluations can and should be done at the national, sectoral and provider levels; what data are required and what system capacity there is at the current time and what needs to be developed in the future. Thus the kind of monitoring and evaluation that will be possible is primarily dependent on cost, data availability and system capacity at each level.

k The Department of Labour should given serious consideration to the development of a Skills Development Performance Profile which spells out clearly the objectives of the training system or strategy and links these to the performance indicators. In addition, the profile should specify what these indicators are measuring, what the informational requirements are and what analytical techniques will be used.

l Long term planning should consider the possibility of developing enterprise surveys and the inclusion of training-related questions in national labour market and household surveys.

THE ROLE OF NATIONAL GOVERNMENT

m The review of training systems in the 1990s shows clearly the success of decentralised models with increased private sector involvement and a greater emphasis on market forces. Nevertheless, the intervention of national government is often necessary to spur reform in particular to overcome difficult political hurdles such as those that relate to the Education-Training interface and to Training-Labour Market linkages. This role for government has been illustrated powerfully in Australia, Chile, Korea and Malaysia.

SOME OTHER LESSONS AND OBSERVATIONS FROM THE COUNTRY REVIEWS

n Both the Australian and UK experience illustrate the value of training and education systems characterised by decentralised models of governance, accountability, effective planning, increased private sector involvement especially in provision, clearly defined objectives and indicators and efficient and effective institutions.

o However, the Malaysian experience is one of a well-run rebate scheme which has increased training only modestly. The sobering lesson here is that a levy-grant scheme of its own will not ensure success in the absence of effective institutions, clear system objectives and measurable performance indicators.

IMPACT STUDIES

p Given the relative lack of data and the infancy of the SETAs, the DoL will be constrained in the complexity of the evaluations it can undertake in the short term. Thus monitoring in the

short term (say, the first two years of the NSDS) should be confined to the development of indicators that are measurable within the constraints of national, sectoral and work place data.

q Nevertheless, consideration should be given to undertaking some form of social cost-benefit analysis beyond the initial two-year period. Preparations for such an impact study should, however, commence immediately so as to determine the necessary data and system capacity requirements.

THE NEED FOR AN EVOLUTIONARY STRATEGY

r South Africa is in the fortunate position that some of the lessons that have been described above have been absorbed already. The Skills Development Act for instance, provides for a decentralised, multi-tier, governance model, for public-private partnerships and for the development of an effective planning apparatus. Furthermore, the new system provides for substantial stakeholder involvement in strategic processes and in the relevant institutions.

s Notwithstanding these positive developments, the definitive lesson from the international literature is that countries should adopt an evolutionary strategy in the development and implementation of their training systems. Such a strategy should be determined by the quantity and quality of its human and other resources. In South Africa, the Skills Development Act has provided the foundation for building an efficient, effective and equitable training system. The challenge for policymakers and other stakeholders is to build on this foundation systematically while being cognisant of the resource constraints.

Technical Report

Monitoring and Evaluation of National Skills Strategies

SUBMITTED TO
USAID/South Africa

SUBMITTED BY
Nathan–MSI Group
J.E. Austin
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Acronyms

ANTA	Australian National Training Authority
DFEE	Department of Education and Employment
CITB	Construction Industry Training Board
DDIT	Double Deduction Incentive for Training Scheme
DOL	Department of Labour
FEFC	Further Education Funding Council (UK)
HRDC	Human Resource Development Council
HRDF	Human Resource Development Fund
ILO	International Labour Organisation
ITAB	Industry Training Advisory Board
ITO	Industry Training Organisation
MITP	Malaysia Industrial Training and Productivity Survey
NCVER	National Centre for Vocational Education and Research (Australia)
NQF	National Qualifications Framework
NVQ	National Vocational Qualification
OECD	Organisation for Economic Co-operation and Development
NTO	National Training Organisation
OVET	Office of Vocational Education and Training
MIS	Management Information System
TEI	Tertiary Education Institutes
R&D	Research and Development
SAQA	South African Qualifications Authority
SETA	Sector Education and Training Authority
SMEs	Small and Medium Enterprises
TAFE	Technical and Further Education
TEC	Training and Enterprise Council
USAID	United States Agency for International Development
VOCED	Vocational Education and Training Research Database
VET	Vocational Education and Training
VETA	Vocational Education and Training Authority

Preface

This project was undertaken by JE Austin Associates (the technical lead) and Nathan Associates, under the Nathan–MSI and Segir–GBTI Joint Venture funded by USAID. The project team comprised Pundy Pillay (Team Leader), Lindsay Falkov (Director, *SkillsWorks,* Johannesburg), David Mullins (Conningarth Consultants, Pretoria), Edward Brooke (Research Associate, Nathan Associates) and Kate Grubb (Research Associate, JE Austin). The project was overseen by Martin Webber and Kevin Murphy of JE Austin Associates, Washington, D.C.

The project comprises two parts: Part 1 is an international review of training systems with a particular emphasis on monitoring and evaluation. Part 2 reviews and proposes methodologies for assessing the National Skills Development Strategy. The principal researcher for Part 1 of the project was Lindsay Falkov. A special thanks to all those who supplied the research team with information at short notice.

1. Introduction

1.1 BACKGROUND

The Skills Development Act, 1998 and the Skills Development Levies Act, 1999, represent the South African Government's commitment to transforming workplace education and training in the country. This legislation aims both to encourage increased investment by employers in the skills of their workforce and to improve the responsiveness of training delivery to skill needs in the workplace. The main elements of the legislation are the introduction of a skills development levy, revamping the ailing apprenticeship system through the introduction of learnerships and skills programmes, introducing systematic skills development planning requirements at national, sectoral and workplace levels and the creation of a new sector / industry training infrastructure through the establishment of 25 Sector Education and Training Authorities (SETAs), across all economic sectors. In addition, all training under the skills development strategy will culminate in formal credits towards or full qualifications registered on the new National Qualifications Framework (NQF), which is governed by the South African Qualifications Authority (SAQA). This training will also be formally quality-assured in accordance with SAQA requirements.

The skills development strategy consists of a three-tier governance arrangement with the Department of Labour (DoL) and National Skills Authority representing the national tier of governance; SETAs and DoL Provincial Offices a second, sector and regional, tier; and workplaces or training provider learning sites, the third tier. The first two tiers of governance are expected to support the primary beneficiaries of training, employers and workers in public and private organisations and enterprises, students enrolled in occupational learning pathways in the Further and Higher education and training bands, as well as the unemployed and poor.

The purpose of this study is to review international approaches to monitoring and evaluating national training systems with similar characteristics to those specified above and to highlight critical factors determining the success or failure of these systems.

The research results have been heavily influenced by the short time frame available to this study (less than 2 months), and the study team's reliance on returns from individuals in selected countries and international agencies, to whom requests for information were made. Accordingly, much of the information received was of a general theoretical or cross-country empirical nature, while the country specific information was fragmented. Nevertheless, the report presents a detailed analysis of monitoring and evaluation approaches to vocational training systems and three country reviews which provide valuable information on the approaches taken in those countries.

1.2 COUNTRY SELECTION

The terms of reference for this study referred to a review of eight countries. However, in-depth analysis of eight countries was not feasible. It was agreed with USAID and DoL that, while information and analysis would include many countries, the more in-depth focus would be on a detailed case analysis of three countries: Australia, Malaysia and the United Kingdom, based on

the relevance of their structure and policies to the South African skills development strategy. Australia has a vocational training structure that closely resembles that employed in South Africa and has also introduced the best features of modern decentralised vocational training system management. Malaysia introduced a levy scheme very similar to the one used in South Africa, and it was assumed that the manner in which Malaysia monitors and evaluates training under the levy, as well as key constraints and success factors based on their experience of implementing the levy, would provide invaluable lessons South Africa. Unfortunately the team struggled to obtain information on these matters from Malaysia. The United Kingdom was selected to specifically examine the monitoring, evaluation and performance contracting approaches and instruments that are used by the Further Education Funding Council. In addition, information from a range of other countries in Scandinavia and Latin America was also examined, but this was insufficient for the purposes of a country review (see Appendix 1A for details of contacts made and information obtained).

1.3 REPORT STRUCTURE

Section 2 of the report presents a conceptual framework for considering contemporary planning, monitoring and evaluation approaches within national training systems. Wherever possible, specific examples from the case studies are included. In addition, a framework for organising evaluation systems and a comprehensive list of training performance indicators that the DoL and SETAs can use to inform their planning and evaluation activities are presented. Specific information on *monitoring* training systems through different governance levels was difficult to access. The team has drawn from the general literature dealing with governance in decentralised training systems and highlight examples of "performance contracts" between national and lower tier agencies, which is the main instrument used to monitor the provision of training. Section 3 discusses some key issues in Vocational Education and Training reform. Finally, Section 4 presents the country reviews focusing on details of each country's monitoring and evaluation practices as well as critical success and failure factors identified within each of these countries.

1.4 RESEARCH METHODOLOGY

The research methodology involved a rigorous search for information including books, studies, reports, newsletters and other documentation so that a literature review could be compiled. Several sources were used for these purposes, including the Internet, sources at the World Bank, and various contacts in the countries studied (see Appendix 1A for details). In addition interviews and phone calls were used as research methods. The research process then involved desk research and analysis, workshops of findings and key recommendations and report writing.

2. Contemporary Approaches to Training System Management

Traditional, state run and centralised, models of vocational training governance have given way to public-private governance partnerships along with the application of standard performance management approaches. The traditional governance model provides for little autonomy for second and third tier agencies, including training institutions. National authorities "micro-manage" lower tier governance structures and training providers, controlling planning, budgeting and financial management from the centre as well as the inputs of training providers - hiring and firing of instructors, procurement and maintenance of capital equipment, training materials, etc. In the traditional system, monitoring and evaluation is the prerogative of national government, where the goals of the system are usually set unilaterally and adjustments to policy, strategy and plans are informed by feedback from administrative reports of lower tier agencies and providers.

The 1990s saw widespread reforms of vocational training systems in search of improvements in the responsiveness of training delivery to workplace skill needs. The main focus of these reforms has been on creating demand-led vocational training systems that are responsive to the skill needs of both the formal and informal sectors of the economy in order to raise the skills profile of employees and the employability of school leavers and the unemployed. Some of the more important reforms characterising the new demand-led approach include:

- The establishment of national training authorities that allow for *public-private governance partnerships* over training systems;
- A move away from traditional manpower planning to *labour market analysis* and tracking and training needs analyses to inform training authorities and providers of current and emerging skill needs;
- *Decentralised control* over the delivery of training to improve the responsiveness of training delivery to the skill needs of industry;
- Shifting government's role in the vocational training system from providing training to *financing and monitoring* training. This shift includes new funding incentives that encourage employers to increase training in their enterprises and developing new approaches to the allocation of public subsidies to public training providers;
- Opening up access of *private providers* to public funds in order to increase competition between public and private training providers. For example, in Queensland, Australia the "competitive purchasing programme" has resulted in greater competition between public and private providers leading to more cost effective training; and
- Increased emphasis on *cost sharing* between government and the main beneficiaries of training.

Along with these changes, many countries have applied *standard performance-based management approaches* to their vocational training systems. This approach involves national

agencies defining the global objectives or outcomes expected of the training system, which provides the framework within which second tier governance agencies and training providers set their *own* objectives. Measurable indicators are attached to these objectives to enable the parties to determine whether or not these have been achieved within specified time periods. Day-to-day management responsibility for the achievement of these objectives is devolved to second tier governance agencies and training providers. Public funds are allocated towards the achievement of these objectives but financial control is devolved to lower tier agencies and providers in a manner that is commensurate with their increased autonomy. For example, in Australia while the Australian National Training Authority (ANTA) oversees the national vocational training programme objectives, general and financial management authority is devolved to State Authorities and these agencies similarly devolve authority to Technical and Further Education (TAFE) colleges. This management-by-objectives approach is heavily dependent on an appropriate monitoring and evaluation system to secure the accountable use of public funds and the effectiveness of training.

Table 1. Characteristics of Traditional and 'New' Approaches to Training Provision

Traditional Approach	New Approach
1. Centralised control: little autonomy for second tier (provinces, regions) and third tier (training institutions); system goals set unilaterally.	Decentralised governance: substantial autonomy for second and third tiers; demand-led: responsive to skills needs of economy.
2. Skills needs determined through manpower planning	Skills needs determined through labour market analysis and tracking training needs
3. Little private sector involvement	Significant public-private partnership in governance and training provision
4. Govt. control over budgets, planning, financial management, inputs of providers	Govt.'s role limited to financing and monitoring training

It must be stressed that high-level management systems and capabilities are required to support this decentralised governance model. Accordingly, its implementation usually needs to be phased in to allow for the development of the necessary systems and competence. Key initiatives that usually accompany the introduction of this management style include

- Capacity building for management and governing bodies in the areas of strategic planning, reporting and evaluation, financial management and internal control systems, and management information systems;
- Clarity on the roles of national, lower tier agencies and providers in the management system;
- The introduction of appropriate management information and financial management systems. This must include reporting and evaluation policies and procedures and the related information requirements to support planning, reporting and evaluation at all levels of the system;
- A checklist of capacity requirements, against which to evaluate lower level agencies ability to receive and manage training funds; and
- The appropriate information technology and equipment to run an efficient management system and management information systems.

In addition, these systems are premised on clearly defined objectives and performance indicators that are understood by all parties and against which performance can be measured.

2.1 MANAGEMENT OF VET PROGRAMMES

2.1.1 Strategic Management and Planning

Strategic management is a goal-oriented process. The starting point is to set clearly defined goals or objectives for the system derived from the core purpose of the vocational training system and the contextual factors impacting on training in the country. Strategies and plans must then be developed to achieve these objectives within specified time periods. Strategy includes management's capacity to organise the resources at its disposal, the organisational structure, systems, people, technology and finances.

Goal setting should include short and long-term objectives. The failure to set long-term objectives usually results in resources being allocated to "fire-fighting", being poorly allocated or not allocated at all; thus, effective goal setting is the heart of strategic management and planning (Gasskov, 2000). Gasskov also argues that the failure to set long-term goals and align resources to achieve these is a central problem underlying poor delivery of many public services. To resolve this problem a new management approach is required that focuses on developing a longer-term perspective. In short, strategic management is "the process of defining and implementing long-term choices regarding objectives, structures and internal policies"(Gasskov, 2000 p.33).

Planning within a strategic management approach requires clarity on the relationship between the various governance structures in the system and the manner in which the planning process is organised between these structures.

The Australian National Plan, 1998–2003, is an excellent example of strategic management and planning within a vocational training system. The plan presents a *limited number of system-wide objectives* for the training system. Each objective has a clearly defined *performance indicator* attached to it and a clear statement of what it is that the indicator is measuring.

The way in which planning for the Australian vocational training system is organised is also instructive, particularly in terms of its organisation across the different levels of governance. The National Authority, a Council of Federal and State Vocational Training Ministers, and the Australian National Training Authority (ANTA) are responsible for setting the national objectives of the system. These objectives must inform independent planning processes in each State Vocational Training Authority and in Industry Training Advisory Bodies (ITABs). The State Authority objectives in turn provide the guidelines within which Technical and Further Education (TAFE) Colleges, in each State, must plan.

While each State controls its own vote for vocational training, these funds can only be accessed once agreement between the State and ANTA has been reached on the targets set against each of the national objectives. Accountability and performance are "enforced" through monitoring and evaluating the objectives, targets and the performance indicators attached to each. In particular, there are financial rewards for States that reach these targets and penalties for those that fail to do so, and these incentives cascade down to the provider level. Day-to-day management is the prerogative of the State authorities and training providers. Training providers decide on their training offerings based on local industry needs and the targets they are expected to meet.

This management approach has also been adopted in New Zealand by the Ministry of Education in order to manage the Polytechnics and in the UK by the Further Education Funding Council, albeit under less complex "unitary" governance systems.

The approach also allows the authorities directly responsible for allocating funds to training to increase training provider performance—accountability and responsiveness to workplace training needs—by attaching performance requirements to allocation formulae. This usually involves allocating funds based on provider or enterprise training plans that set-out the main objectives and related targets of the training provider, and either paying on achievement of objectives or increasing or reducing budgets in future years according to the degree of success in reaching these targets.

Multi-Tier Model of Governance – Australia

Tier 1: ANTA + Council of Federal & State Ministers
Sets system-wide objectives; responsible for strategic planning; development of performance indicators linked to objectives.

Tier 2: State Vocational Training Authorities + ITABs
State planning and sectoral planning respectively. Set targets against national objectives. Oversee providers.

Tier 3: Training Providers: TAFE Colleges

There are, however, some important caveats to this approach. The crude application of demand-led approaches and performance management systems to training environments can lead to serious unintended consequences such as the destruction of training provider capacity. Certain kinds of training, particularly specialised technical training often require large investments in technical plant and equipment which is not supported by short-term competitive contracting systems. Similarly, performance targets and indicators need to give providers adequate time horizons for their achievement. More generally, outcomes based governance and funding training models need to be tempered by direct support for the development of high quality training inputs—management and instructors, curriculum and course development, equipment and materials.

In addition, it is imperative that training objectives and related indicators are carefully defined. Firstly, objectives and indicators must include both effectiveness and efficiency objectives. Obviously, achieving one's objective "at any cost" is unacceptable. Secondly, the indicators chosen must be measurable within the resources, timeframes and MIS systems available. Thirdly, as discussed above, the indicators must be clearly understood by all parties concerned. Fourth, the actual targets set are probably best set through a "negotiated" process, which allows both lower level and national authorities to reach agreement on appropriate target levels. Fifth, the objectives, indicators and targets set need to be evaluated as a package and possible unintended consequences assessed.

2.1.2 Monitoring and Evaluation

Performance based management systems rely heavily on the appropriate design and effective implementation of monitoring and evaluation systems. While day-to-day management of training is the responsibility of each training authority as well as providers and enterprises, accountability for the use of public funds and achievement of the system's goals is realised through proper reporting by and evaluation of the agencies concerned. The next two sections focus on evaluating the performance and impact of training systems, while section 2.3 deals with monitoring training and the agencies responsible for implementing it.

Evaluation is probably the most important part of any project, programme or national strategy. It is the foundation for determining whether policies, programmes, plans and their implementation are achieving the desired results and for system-wide learning that results in adjustments to and improvements in the impact of training. Learning and growth are the products of understanding the factors responsible for success or failure in achieving the objectives set. Unfortunately, evaluation is often the most neglected part of management systems. This is at least partly due to the complex nature of training evaluations, which needs to be carried out at a variety of different levels, as well as a general failure to identify and implement the supporting systems for effective evaluation. The latter includes setting clearly defined objectives, identifying what needs to be measured and the related information needs, the systematic collection and recording of information and identifying the types of analytical techniques to be used.

Training evaluations include "assessments" of learner achievements against the objectives of training programmes; "standard performance evaluations" of whether or not training agencies have achieved their enrolment, graduation, expenditure and cost targets; and impact evaluations ranging from learner and employer satisfaction with training to the income, productivity, and labour market effects of training. The Kirkpatrick Model of training evaluation, widely used by enterprise Human Resource and training managers, highlights the different levels of training evaluations that need to be undertaken.

2.1.2.1 The Kirkpatrick Model

The model's core assumption is that the function of training is to transfer new knowledge, skills and attitudes to learners in order to improve job performance. The model consists of four levels of evaluation. Each successive evaluation level is built on the information provided by the previous level. In other words, each successive level represents a more precise measure of the effectiveness of the training programme. The four levels are listed below:

- ***Level 1: Reaction—a measure of satisfaction.*** This "measures" learner satisfaction with the training they have received. It attempts to answer questions regarding the participants' perceptions of the training they received, for example "Did they like it?" and "Was the material relevant to their work?" These questions scratch the surface of the training evaluation.
- ***Level 2: Learning—a measure of learning.*** This involves formal learning assessment techniques to gauge the level of knowledge and skills acquired by learners through training. The model proposes that this be done via Pre-test and Post-test assessments.
- ***Level 3: Behaviour/Transfer—a measure of behaviour change.*** This level evaluates whether learners were able to apply their new knowledge and skills to their jobs. In particular, it measures the degree to which training has positively affected the behaviour and competence of learners in relation to their jobs. Evaluation at this level is more complex and time consuming.
- ***Level 4: Results—a measure of results.*** This level evaluates whether training has contributed to a measurable difference in the performance of the organisation. Here training success is measured in terms of the return on investments in training to the company, for example – increased income, production, improved quality, decreased costs, reduced frequency of accidents, increased sales, and even higher profits or return on investment. From a business perspective these are the main reasons for investing in

training, but remain the most difficult to evaluate. This is because evaluation techniques that are able to control for all the other factors that may impact on organisational performance are still in their infancy.

As discussed above, the model assumes that lower level evaluations need to be undertaken before the results of the next level can be ascertained. For example, the model assumes that learning cannot take place if learners are unsatisfied with the training and job performance cannot improve unless learners have actually gained new knowledge and skills the programme was expected to transfer. The model also stresses that positive evaluation results are dependent on effective planning for training at enterprise level prior to designing and conducting training, in order to identify performance gaps.

2.1.2.2 Categorising Training Evaluations

For the purpose of this study we distinguish between evaluating the *performance* of training systems and *impact* evaluations. The former refers to "recurring" evaluations that are structured directly into the performance management system and are used to regularly monitor and evaluate the achievement of certain "lower order objectives", levels one, two and possibly three of Kirkpatrick's model. Impact evaluations on the other hand generally do not lend themselves to this type of ongoing evaluation, since the techniques required to undertake the evaluation must be based on formal studies of a sample of the population under review. This is Kirkpatrick's fourth-level evaluation. Examples of the former include

- Placement rates of students or unemployed people in permanent employment on completion of learning programmes;
- Analysing training agency expenditure and a wide range of actual training costs to monitor efficiency levels; and
- Evaluating enrolment rates broken down into various categories to establish training "effort" levels and, for example, the equity implications of training conducted.

Monitoring and Evaluation: Performance of Training Systems—Some Examples

- Placement rates of students or unemployed persons
- Analysing training agency expenditure and range of training costs to monitor efficiency levels
- Enrolment rates by various categories: effort level, age, gender, education level

Progress against these indicators can be incorporated into regular reporting and evaluation procedures of training providers or enterprises to the training authorities and likewise between second and first tier authorities.

Impact studies focus on measuring factors such as

- The impact of training on graduate income;
- The impact of training on individual workplace performance;
- The impact of training on overall enterprise or organisation performance; and
- The relationship between the costs of a particular learning intervention or national training strategy and the benefits it confers on individual participants and society at large.

These factors need to be measured through formal studies that are difficult to build into national performance management systems. Where they are not confined to single organisations,

the studies usually involve relatively small samples which do not allow global performance judgements to be made. Nevertheless, since they are measuring factors which go to the main purpose of training, they are an essential part of any training evaluation system. The main types of instruments used to measure these factors include

- Cost-benefit studies;
- Rate of return analysis;
- A variety of survey based instruments, which may include econometric modelling techniques for result analysis; and
- Cost-effectiveness studies;

A further step in ordering evaluation systems is to locate the specific objectives and indicators identified under a set of basic principles towards which all training systems are working. These principles include effectiveness, efficiency, and equity goals.

The final step is to create an evaluation matrix that logically links the *objectives* of the system or other tiers of governance with the *indicators* and related *performance levels* or *targets* attached to each indicator. In addition, the *information* requirements and *analytical techniques* to be used to carry out the evaluation must be specified.

Gasskov (2000) presents a useful way of ordering these issues. He proposes that any intervention should have a *"performance profile"*, which is divided into *"standard performance indicators"* and "*complex performance criteria"*. For the purpose of this study, the DoL may consider developing a **Skills Development Performance Profile** consisting of performance indicators that can be measured on a regular basis through the performance management system and complex performance criteria which measure the impact effects of training using regular, and even standardised, formal "study" methodologies.

Impact Studies

Measures

- Impact of training on graduate income;
- Impact of training on individual w orkplace performance
- Impact of training on overall enterprise or organisation performance
- Relationship between cost and benefits of training

Instruments

- Cost-benefit analysis
- Rate of return analysis
- Other survey-based instruments, e.g. econometric modelling
- Cost-effectiveness studies

Goals/Principles

- Equity
- Efficiency
- Effectiveness

Linking this framework to the matrix used by ANTA to describe its core objectives for the period 1998–2003 provides a practical example of what such a performance profile might look like.

The performance profile should focus on a limited set of core objectives for national, second tier and institutional levels. Accordingly the objectives and indicators should measure the overall performance of agencies and not the detail attached to various functions of these agencies. Within this framework, authorities will obviously develop detailed business plans that will expand, in particular, on operational objectives across their various functions. The performance profile can then form the basis for a performance contract or agreement between the national authority and the related agencies.

Table 2. Example of a Skills Development Performance Profile

Objective	Performance Indicators		What it is measuring	Analytical Technique	Information Required
	Standard Indicator	Complex Indicator			
Effectiveness Objectives & Indicators					
1. Improving the employability of South African students and unemployed people through training	Placement rates		Numbers of non-employed learners entering learnerships that are placed in permanent jobs x-months after completion of training	SETA's & provincial offices have learner tracking systems in place	Learner enrolments, completion and placement data
2. Contributing to improved workplace performance and efficiency through training	2.1 Learner/ employer satisfaction rates with the quality & relevance of training	2.2 Measures of the productivity effects of training in the workplace	2.1 Learner & employer satisfaction with training programmes 2.2 The productivity impact of training	2.1 Regular surveys of enterprises undertaking training for their workers. 2.2 Formal sample based studies.	
3. Increasing the access of students and the unemployed to education and training	Enrolment rates of students and the unemployed in learnerships		Percent of students and unemployed who become enrolled in a training programme	Recording of enrolments broken down into various categories.	
4. Supporting the establishment of viable small and micro enterprises	No. of learners who established a small/micro enterprise after training		The success of the training in providing learners with relevant entrepreneurial skills	Graduate follow-up surveys	Percent of training programmes which develop entrepreneurial skills, percent of learners from these programmes who establish a small/micro enterprise.
Efficiency Objectives & Indicators					
1. Maximising the value of levy revenue expenditure	Cost / learner enrolled Cost / graduate		The efficiency of levy expenditure per input The efficiency of levy expenditure per successful output	Analysis of cost, enrolment and success rate data	Relevant cost categories and information. Enrolment and completion rate data.
Equity Objectives & Indicators					

The timing of evaluations also needs to be carefully considered. There needs to be an adequate period between the end of the programme and the evaluation, depending on the type of factor being measured.

A useful approach to deriving aggregate results from impact evaluations is to analyse the results from multiple studies and aggregate the findings (Taschereau, 1998). One of the methods used for this is a meta-analysis. Glass (1976) defines a meta-analysis as "the analysis of analyses…the statistical analysis of a large collection of analysis results from individual studies for the purpose of integrating the findings." In this way a meta-analysis is able to overcome the

problems of deducing aggregate findings from the narrow scope of individual programme evaluations (Taschereau, 1998).

2.2 EVALUATION METHODOLOGIES

This section examines several formal evaluation techniques that have been applied to training. These include recent World Bank in-roads into training impact evaluations, a variety of training effectiveness survey instruments, and a Fourth Generation Evaluation Model. Another widely used evaluation technique is formal cost-benefit analysis, which is the focus of the second part of this study and is therefore not discussed here.

2.2.1 World Bank Training Impact Studies

The World Bank Training Impact Studies represent the most comprehensive analysis of the impact of training at enterprise level the researchers in this study have come across. A study completed in 1995 (Tan & Batra, 1995) examined training effects at enterprise level across five developing countries (Colombia, Indonesia, Malaysia, Mexico and Taiwan). The same methodology was applied again to a case study of enterprise training in Malaysia (MITP Survey, World Bank, 1997).

These firm surveys are important to the Skills Development Strategy in South Africa because they provide some pointers towards the kinds of monitoring and evaluation that need to be undertaken in the medium to longer term in this country.

For instance, the MITP survey provided information on and analysis of, inter alia, the following important issues, using formal survey and econometric modelling techniques:

- Incidence of training in manufacturing;
- Incidence of training by sub-sector;
- Internal and external sources of training;
- Sources of training by firm size;
- Number of workers trained by firm size, by industrial sector, by skill group;
- The relative importance of the determinants of training (firm size, education level, skill level, gender, unionisation, etc.)
- Estimates of the impact on productivity of training, including wage outcomes; and
- Detailed analysis of training policies.

2.2.2 Survey-based Training Effectiveness Techniques

A World Bank review of "Survey-Based Training Evaluation Techniques", includes the following:

a) Tracer Studies

These are sample-based surveys of graduates, which focus on "analysing their labour market experiences". The key questions these surveys attempt to answer are

- The length of time it took to find employment after graduation;
- The proportion of graduates entering training-related or closely related occupations;
- The earnings of graduates in training-related and other occupations; and

- The effectiveness of the training, as judged by the graduates themselves and by their employers.

b) Reverse Tracer Studies

The focus here is on key occupations and the survey attempts to unravel the manner in which those in these occupations have acquired their skills. The key issues this type of survey attempts to address are

- Identification of the learning pathways leading to occupational competence;
- The proportion of employees following the various learning pathways; and
- Whether employers believe there is any significant difference in the characteristics of employees following these different pathways.

These studies essentially provide a technique for measuring the effectiveness of different learning pathways. Based on the findings of such studies, training authorities may decide to re-allocate their training resources to certain types of learning programmes. If cost data is also available, the cost-effectiveness of these different learning pathways can be compared, which is an even stronger basis for making policy decisions on resource allocation.

c) Enterprise Surveys

These surveys can be structured in many different ways and obviously provide the most direct means of accessing information on enterprise training and its impact. Where formal training incentives are in place, such as tax incentives or training levy schemes, survey returns can be structured into the requirements for firms to access their incentives. However, the main problems with these surveys are the additional paper burden on firms, which exacerbate the compliance burden facing firms where formal incentives are in place, and ensuring that representative samples of small enterprises are included. The World Bank survey instrument, discussed above, captures information by industry and firm size on profitability, capital intensity, occupational structure, educational profile of the workforce, expenditure on R&D and exports.

d) Household Surveys

The samples are much larger in household surveys, providing more comprehensive information but far less detail given that education and training is one section of a much larger survey.

e) Longitudinal Surveys

Such surveys focus on the "dynamics of skills development". The survey involves identification of a sample of respondents who are interviewed at regular intervals to establish the education, training and employment pathways they have followed and the interactions between these variables. (World Bank, Unpublished Report, still in progress, 2000)
Training authorities and providers should be undertaking regular surveys to ascertain the effects of their training programmes. Many TAFE colleges in Australia undertake regular tracer studies of their graduates and have even begun introducing regular, but simple, enterprise surveys. While in their pure form these survey instruments need to be sample based, it should be possible to frame a simple questionnaire that all enterprises participating in levy schemes are required to

complete and submit as part of their reporting requirements to training authorities. This survey would provide regular and rich information on training effectiveness to these authorities.

2.2.3 Fourth Generation Model

This model is presented because it emphasises the importance of stakeholder participation in evaluation processes. The model assumes that joint approaches to goal setting and evaluating the results of projects and programmes may be more important than focusing simply on "cold facts". This approach may be particularly relevant to the governance structure of the Skills Development Strategy with its various stakeholders at national and sector levels.

Over the past ten years project implementation methodologies have evolved away from linear models in which projects are developed, implemented and then evaluated. Emerging approaches tend to view evaluation as a *holistic process* rather than as a discrete event. Evaluation is understood as the process of looking at how all aspects of a programme or project have been functioning as the basis for informed planning and decision-making. These new, emerging approaches to evaluation usually include internal evaluation and *participatory methods*, commonly referred to as *fourth generation evaluation*.

The basis of the fourth generation approach is that all stakeholders should understand and respond to the claims, concerns and issues of other stakeholders.[1] The product of an evaluation is not a set of conclusions or value judgements based on facts and findings, but rather an agenda for negotiation of the claims, concerns and issues of all stakeholders.

Through a process of discussion and negotiation, a fourth generation evaluation aims to deal with any conflict between stakeholder opinions and, if possible, to reach consensus. The role of the evaluator is to facilitate this process. The evaluator ensures that stakeholders are not only allowed to articulate their ideas, but also to actively and constructively participate in the evaluation process – stakeholders may interpret the impact of a programme or project in a dramatically different manner than programme or project implementers and evaluators.

A fourth generation evaluation generally goes through the following four stages:

- Identifying and grouping stakeholders and asking them to talk about their claims, concerns and issues;
- Explaining and discussing each stakeholder group's claims, concerns and issues to and with all other stakeholder groups;
- Collecting information based on any claims, concerns and issues that have led to disagreement in the second stage of the evaluation process; and,
- Facilitating a process of negotiation among stakeholder groups using any information that might ease the process. The goal is to reach consensus.

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[1] As identified by Guba and Lincoln (1989):

- A *claim* is a positive opinion that a stakeholder has about the evaluated programme or project;
- A *concern* is a negative opinion that a stakeholder has about the evaluated programme or project and
- An *issue* is anything on which a stakeholder might disagree.

2.3 MONITORING SYSTEMS—USING PERFORMANCE CONTRACTS

Internationally, Australia, New Zealand and the UK have introduced formal performance contracts between the training authorities and implementation agencies. In New Zealand, for example, government departments enter these contracts with their respective ministries. Similarly, in the UK the Further Education Funding Council (FEFC) enters into a contract called a "Formal Management Statement" with the Secretary of the Department of Education and Employment, which sets out the performance requirements the Council must meet with the public funds allocated to it. The FEFC in turn enters formal "contracts" with Further Education Colleges it allocates funds to. In Australia the ANTA Agreement is effectively a contract between ANTA and the State Authorities. In each of these instances the performance contract is based on a limited number of objectives, performance indicators and targets. The implementation agencies are required to report periodically on progress towards these targets and, in the case of ANTA, there are rewards and penalties for achievement or non-achievement of these targets.

2.4 QUALITY MANAGEMENT SYSTEMS

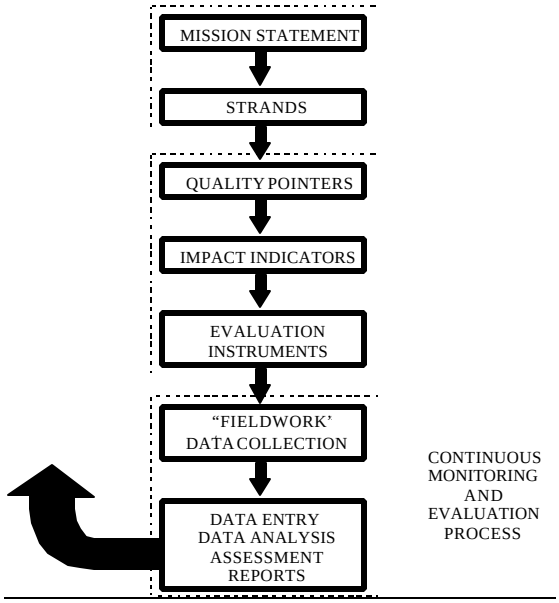
Formal quality management systems are increasingly applied to education and training systems. They represent particular approaches to performance management, but with special emphasis on the quality of learning provided. As applied to training environments these systems focus on training provider adherence to the agreed aims of training programmes, continuous improvements in their training delivery and building partnerships to enable providers to meeting the full spectrum of stakeholder needs through their programmes. In Australia the following general and VET specific quality management systems have been employed in the VET sector:

- Total Quality Management (TQM)
- The Quality Matrix
- Benchmarking
- Self-managed teams.

  (NCVER: Quality Assurance in VET, 1997)

One approach to applying quality management to a training environment involves generating a vision and mission, or set of objectives, for the organisation or particular training programme, that is agreed by all stakeholders. The mission statement comprises several quality *strands* each of which leads to various quality pointers. Each quality pointer has a number of good practice indicators attached to it. These indicators must be workshopped with relevant stakeholders in order to jointly agree measurable and verifiable pointers for these indicators. It is these verifiable pointers that are then used to develop evaluation instruments to collect qualitative and quantitative data for the various evaluation phases. A diagrammatic representation of this general approach to quality management is presented below.

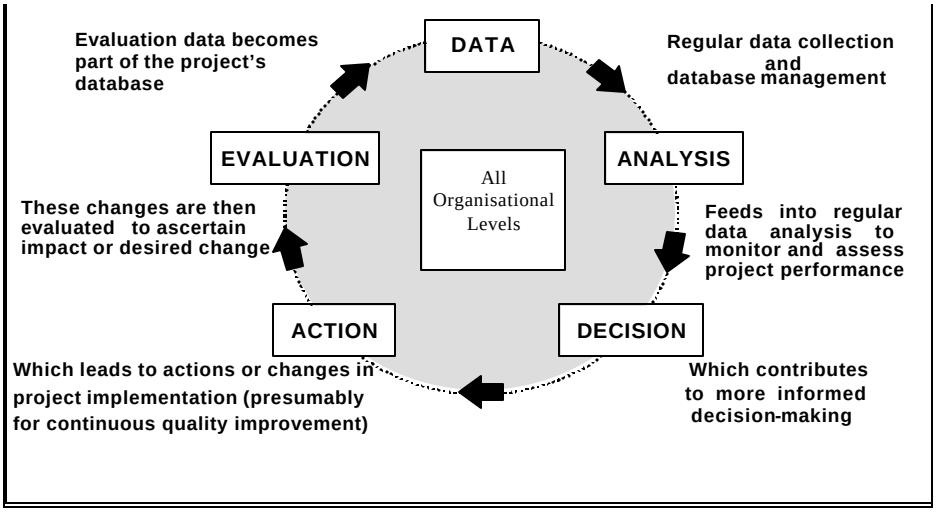
Diagram 1. Steps Leading to the Monitoring and Evaluation Process



2.4.1 Management Information System

A diagrammatic representation of the key elements of a management information system is presented below. This diagram illustrates the circular manner in which data collection and analysis inform decision-making and evaluation which in turn inform modifications to the data collection process and analysis.

Diagram 2. Management Information System



2.5 PERFORMANCE INDICATORS

This section presents a sample of indicators applied to vocational education and training environments. It is important to note that indicator selection needs to be done carefully taking account of definition, interpretation, precision or accuracy and situational constraints. (Dimensions and Effectiveness, ANTA). Benchmark data for some of these indicators are presented in the case studies below.

Following the Skills Development Profile developed earlier; the distinction is made here between Standard Performance Indicators and Complex Performance Criteria.

A. Standard Performance Indicators

General effectiveness indicators

- Numeracy and literacy targets
- Qualification profile targets
- Enrolment rates by programme and level of learning
- Completion rates or graduation rates by programme and level of learning. The difference between these is an indication of drop-out or repeater rates which are key drivers of training cost
- Placement rates
- Qualification or unit standard acquisition rates
- Actual versus target "public" expenditure on training

Company level effectiveness indicators

- Learner and employer training satisfaction rates:
  - — Satisfaction with training quality
  - — Relevance of training
  - — Main reason for undertaking training
  - — Ease of finding an appropriate job
  - — Relevance of skills learned to job requirements
  - — Importance of the job to the firm in the future
  - — Employer's opinion of trainability of employee, work ethic, relevance of skills, improvement in skills, effect of training on job performance
  - — Likelihood of employer sending other employees on same course
- Company participation rates in levy-grant schemes, by sector/industry & firm size
- Training expenditure as % of total remuneration
- Training costs as a percentage of total remuneration
- Average training hours per FTE – by occupational category
- Training impact on accident rates in the workplace

Efficiency indicators

- Unit costs of training – cost comparisons in training need to be carefully defined since programme inputs can differ markedly depending on the level of technical equipment and related inputs required for the training.
  - — Cost per learner enrolled – in-house & external costs per learner

  - — Cost per graduate – (the effective cost of training). The ratio between cost per learner enrolled and cost per graduate is effectively a measure of the internal efficiency of training.
  - — Cost per learner placed in employment. The ratio between this and cost per learner enrolled can be taken as a measure of the external efficiency of training.
  - — Capital cost per learner
- Instructor productivity measures, which measures the time taken to effectively train an employee to a certain level of skills
- Training capacity utilisation

Equity indicators

- Key indicators above broken down by gender and other target group categories

System Capacity Indicators

- Financial management and budgeting capacity
- Management information system capacity
- Planning and evaluation capacity
- Quality assurance system capacity
- Communication and information dissemination
- Innovation

B. Complex Performance Criteria

- Impact of enterprise training & development on absenteeism and voluntary turnover – impact of T&D on staff retention
- Income effects of training
- Employment effects of training
- Productivity effects of training

In Australia, for example, the Canberra Institute of Technology conducts regular surveys to evaluate the impact of their training on the following:

- Graduate wages and salaries
- Numbers of graduates employed in an industry or occupation related to their training
- Number of trainees continuing in further education
- Duration of employment of graduates
- The impact of training on the employment status of graduates
- The impact of training on career changes made by learners

3. Some Key Issues in Vocational Education and Training Reform

Gill et al (2000) in their survey of VET in seventeen transition and developing economies and two developed countries identify two important reform issues relating to the organisation, provision and financing of VET, namely reorganising to facilitate continual reform and encouraging private providers.

REORGANISING TO FACILITATE CONTINUAL REFORM

Fragmentation because of the involvement of multiple government agencies and the difficulty of obtaining timely inputs from employers and trainees make it hard to ensure efficient and accurate feedback to VET suppliers and quick reforms in response to this feedback. Sometimes the slow responses prompt interventions by officials in higher levels of government. For example, Korea's Presidential Commission on Education Reform helped to resolve contradictions between general and vocational secondary education and higher education. Malaysia's Economic Planning Unit helps to monitor whether labour market demands are being efficiently met and the changes required to ensure that VET supply keeps pace with other efforts to reach industry country status by 2020. Chile's Planning Office played a crucial role in the 1980s in designing VET policies and in determining the pattern of government subsidies for general and vocational education. Gill et al cite the example of Australia, which launched reforms to ensure that its VET system would be sustainable and self-adjusting as circumstances change, as perhaps the most innovative.

Despite the expansion of Australia's VET system up to the mid-1980s, it was criticised on the grounds that the system was too inflexible to respond quickly to skill shortages or new labour market demands and that it operated with procedures and standards that were out of date and no longer cost effective. Gill et al show that Australia's efforts to transform its system into a cost-effective one responsive to changing labour market conditions comprised four sets of measures:

1. Combining the relevant government agencies into one body at the federal level for more coherent policymaking and allocation of public funds, namely the creation of a single Department of Education, Employment, and Training.
2. Ensuring employers' and workers' participation in policy setting at the federal and state levels, through the establishment of the National Training Authority (ANTA). ANTA is "owned" by the government (federal and state), employers and workers.
3. Shifting some of the financial burden of VET investments onto the beneficiaries, including the introduction of student fees and 'training wages'.
4. Ensuring competition in provision so that the supply is cost-effective and relevant, including competitive bidding among training providers (public and private).

ENCOURAGING PRIVATE PROVIDERS

In recent years, governments in many developing and transition economies have come to recognise that a healthy private supply of vocational training is good for both labour market efficiency and for budgetary reasons. Gill et al (2000) identify as key factors for the success of private sector provision of training (i) clear and lenient laws for the establishment of private providers; and (ii) balanced funding formulas.

Gill et al point out also that when training policies are well designed, a vigorous private supply response is possible. In Chile, for instance, funding mechanisms require public providers to compete on equal terms with private firms. As a result, private firms now supply a healthy portion of commercial, industrial, and agricultural secondary education. For shorter courses that lead trainees directly to jobs, Chile's experience shows that clear and balanced legislation may be even more important than government subsidies. Although these conditions are necessary, they are not sufficient. For a vigorous private supply of training, the demand for the skills that these programmes provide must also exhibit growth. Generally, the willingness to pay for skills that are relatively general, such as English-language proficiency and computer-related and secretarial skills, arises sooner than for comparatively specific skills, such as those required to obtain work as a technician or machine operator. As a result, when regulations are favourable, the private supply of commercial training emerges first. The Czech Republic's experience shows that with the growth of demand for technical skills, brought about by growth in the modern manufacturing sector, the private supply response for technical training can be equally vigorous. In the light of these findings, two popular beliefs should be reconsidered: government provision of technical training is necessary because the private sector is "reluctant' to enter this field because of risks or costs, and universal (government) accreditation schemes are necessary to ensure that the "poor are not taken advantage of" by profit-seeking training firms.

In summary, Gill et al (2000) in their survey identify the following key factors that are critical for the success of training systems:

- Access to and the quality of basic education—the educational profile of the workforce
- Setting clear training programme objectives and meeting these
- Strong stakeholder support for training programmes
- Levels of public sector investment in training and the manner in which public funds are allocated to training
- A competent instructor core
- Effectively communicating the objectives of national training strategies and information on how stakeholders are expected to participate in the strategy.

Key constraints on effective vocational education and training systems include the following:

- Inadequate financing
- Incomplete information
- Fragmentation of systems
- Poor communication with stakeholders
- Weak instructional capacity
- High labour turnover.

Specific constraints on training at firm level identified in by Gill, Dar and Fluitman (2000) in Malaysia include

- Firm size,
- The use of immature technology,
- High training costs, and
- A lack of information about how to organise training at enterprise level.

Other external factors that impact on country training levels include

- Levels of domestic and international competition facing enterprises,
- The structure of industrial and enterprise labour markets, and
- Enterprise recruitment practices.

4. Country Reviews

4.1 AUSTRALIA

As Gill et al (2000:465) state, few countries have pursued the reform of VET as persistently as Australia, with change being a constant theme for more than 20 years. The key lesson from the Australian experience is that no quick fixes are possible and reform must adapt as a country's economic, industrial, political and social circumstances change. Critical to the success of VET in all countries is getting the institutional framework right and confronting institutional impediments as circumstances change.

4.1.1 Management of the Australian VET System

a) Key Institutions

i) ANTA and the Council of Ministers

The Australian National Training Authority (ANTA) was created in 1992 with the aim of reducing a highly fragmented training system. It remains responsible for coordinating the VET sector in Australia. ANTA's philosophy is focused on encouraging cooperation between autonomous State VET Authorities and industry in order to build a cohesive VET sector.

The main instrument through which this is achieved is the ***ANTA Agreement***. This Agreement sets out the conditions of the partnership between the Federal and State government as well as that with industry. The agreement sets out system-wide objectives, roles and responsibilities of the main agencies in the system and the measures used to evaluate State Authority performance and accountability to the objectives of the system, including expenditure and enrolment targets that each State is expected to achieve. (Annual National Report, 1998).

Under the ANTA Agreement, the ANTA Ministerial Council, consisting of Commonwealth, State and Territory Ministers for vocational education and training, is responsible for setting national goals, objectives and priorities. The role of the ANTA Board is both to advise and support the ANTA Ministerial Council, in particular, to provide national co-ordination and support for VET and to monitor and evaluate the performance of the system (Annual National Report, 1998).

Technical and Further Education (TAFE) colleges are the major providers of vocational training in Australia. The TAFE colleges have been the main recipients of public funds for VET although the opening up of public funds to private training providers has been a major focus of ANTA for a number of years now (Annual National Report, 1998).

ii) National Centre for Vocational Education Research (NCVER)

NCVER is Australia's national vocational education and training research and development centre. It is a registered company and owned by Australian ministers responsible for vocational education and training. Managed by a board of eight members who represent business, trade unions, training authorities and governments, it is committed to achieving continuous improvement and quality standards.

NCVER has four broad areas of activity. These include

- Undertaking and encouraging research and evaluation;
- Collecting and disseminating TAFE and other VET statistics;
- Disseminating VET information through ongoing projects, workshops, etc; and
- Providing research and implementation assistance on a commercial consulting basis. (NCVER website)

iii) ITABs

Industry Training Advisory Boards (ITABs) were established to research and formulate industry-training plans in partnership with ANTA and the State Training Authorities. There are currently 18 national ITABs, which cover all sectors of the economy. The performance of ITABs is reviewed regularly to ensure that they have the necessary support from industries (Annual National Review).

For example, the objectives of a specific industry, the National Metal, Engineering & Aerospace 1995 can be gleaned from its 3-year training plan for 1995-1997. These objectives include the following:

1. Increase industry's involvement in the VET system and provide more control to ITABs to implement VET strategies that suit the industry.
2. VET needs to be based on industry-defined competencies. This can be realised through a review of national curriculum to align competency standards.
3. Need to introduce strategies such as flexible delivery to identify and implement strategies that meet the needs of enterprises and overcome the barriers to participation in training.
4. Better communication is needed between training providers and industries and within the TAFE system. All elements of the VET sector need to review strategies to improve communication.
5. Implement competency based training.
6. Need to expand the definition of flexible learning and all VET staff needs to be involved in implementing this strategy.
7. There is a need for greater "articulation/liaison" between schools, TAFE, industry, universities and other bodies concerning assessment, accreditation and recognised industry training advisory bodies.
8. Technology and new methods of work organisation need to be incorporated into training programmes on a time basis so that the programmes remain relevant to current technological trends in the workplace.

   (National Metal, Engineering & Aerospace Vocational Education and Training Plan,

1995-97)

b) Planning

National Plan. The ANTA board in consultation with all stakeholders develops Australia's National five-year strategy. The draft strategy is then sent to the Ministerial Council where it is approved. The strategy is based on socio-economic trends and their implications for the VET sector. (Australia's National Strategy for Vocational Education and Training 1998-2003).

State and Territory Plans. The national strategy informs the development of annual State and Territory plans. Together these serve as the key planning instruments for the VET system. (Annual National Report, 1998).

Industry Training Plans. A primary function of ITAB is to advise industry and government on their particular industry's training needs. This is done through industry training plans that also inform government about the manner in which industry intends addressing the objectives contained in the national strategy. These plans are regularly updated and validated every six months through surveys of a sample of large, medium, and small businesses (Annual National Report, 1998).

c) Performance Measures

The Performance Review Committee of the ANTA Board *identified eight key performance measures* that correspond to the overall objectives of Australia's National Strategy for Vocational Education and Training, 1998-2003. The key performance measures, along with their corresponding objectives are listed in the table below. What these key performance areas specifically measure is also included in this table. These indicators are to be phased-in over a period of three years. A full report detailing the implementation of the key performance measures will be published in 2001 for the year 2000. (Key Performance Measures for Vocational and Educational Training).

4.1.2 Management Information Systems

The Australian Vocational Education and Training Management Information Statistical Standard (AVETMISS) was developed to capture all learner achievements and quality assurance data. More generally the latest National Plan states that methods of improving the efficiency of training delivery will include an improved national information system. This will include the distribution of several major surveys to learn more about student characteristics, completion rates, employer and learner satisfaction rates, and skills profiles at national, state and territory, and industry levels (Australia's National Strategy for Vocational Education and Training 1998-2003).

4.1.3 Monitoring and Evaluating VET

Funding

In 1998, approximately $13.40 was spent for each hour of vocational education and training delivered by both public and private training providers using government funds (1998 At a Glance: National Vocational Education & Training System Performance). This figure obviously varies across States and Territories and industries. Key cost drivers across different States include

Table 3. Key Performance Measures and Corresponding Objectives

Objective	Key Performance Measure	What They Measure
Equipping Australians for the world of work	Stocks of vocational education and training skills against desired levels (including expressed industry demand in the short term and also against international benchmarks in the longer term) ***(Key performance measure 2)***	Size of Australia's vocational education and training skills pool and how well industry needs and those of the economy are being met by the vocational education and training sector
	Employers' views on the relevance of skills acquired through vocational education and training ***(Key performance measure 3)***	Relevance of training in the workplace
	Student employment outcomes and prospects before and after participation in vocational education and training ***(Key performance measure 4)***	Employment outcomes for students
Enhancing mobility in the labour market	Skill outputs produced annually within the domain of formally recognised vocational education and training ***(Key performance measure 1)***	Contribution of vocational education and training sector to Australia's skills pool and to labour mobility
Achieving equitable outcomes in vocational education and training	Vocational education and training participation, outputs and outcomes achieved by client groups ***(Key performance measure 5)***	How well the vocational education and training sector is servicing particular groups in the Australian community
Increasing investment in training	At the time of publishing this strategy, a key performance measure against this objective had yet to be developed.	
Maximising the value of public vocational education and training expenditure	(Actual) public expenditure per publicly funded output ***(Key performance measure 6)***	Efficiency of public dollar usage to generate skill output
	(Actual) public expenditure per total recognised output ***(Key performance measure 7)***	Extent to which public funds leverage private investment in training

SOURCE: Australia's National Strategy for Vocational Education and Training, 1998-2003

differential learner: instructor ratios, government policies, demographic status, instructor salaries, and types of training delivered. (1998 At a Glance: National Vocational Education & Training System Performance).

TAFE colleges currently receive funds proportionate to the number of student contact hours (Tchaban, 2000). Thus far, this method has proven to be somewhat unsuccessful. It has failed to encourage increased investments in training and to improve efficiency. One of the reasons for this has been the failure of the funding system to encourage flexible learning systems. Accordingly, funds have been specifically allocated to encourage innovations in flexible delivery of training. This has been realised in the following three ways:

- ANTA has set flexible training delivery as a core objective of the system and has linked a portion of State VET funding to reform efforts in this area. State agencies are required to report to ANTA regularly on progress towards flexible delivery.
- Funds have been specifically allocated to flexible learning pilot projects and to research on flexible learning.

- Funds have been made available to develop systems that are complementary to flexible learning approaches, for example, the Education Network Australia and Open Learning Information and Materials Clearing House. (Tchaban, 2000)

Tchaban (2000) suggests that a second reason for the failure of the funding approach to increase investment in and the efficiency of the VET system is that the allocation of funds based on student contact hours should be changed. Funding should rather be based on 'outcome measures' or the extent to which the education and training objectives are realised. Another suggestion by Tchaban (2000) includes a tendering system to increase competitiveness within the vocational education and training sector. In Queensland Australia, for example, the competitive purchasing programme invited registered training organisations to submit proposals to deliver training. This tendering process has led to more competitive and cost-effective training (Annual National Report, 1998).

In its 1996/97 plan the National Metal, Engineering & Aerospace ITAB recommended that funding decisions be made based on the negative effects (costs) associated with not training or inadequate training. The plan notes that within the Aerospace Industry the right question to ask is whether the industry can afford *not* to provide training to their employees.

4.1.4 Indicators

In this section a sample of indicators used in the Australian system is provided. A distinction is made here between 'soft' (easier to measure) indicators and 'hard' (more difficult to measure/more complex data requirements) indicators. In developing a set of indicators for the Skills Development Strategy in South Africa, it would be useful to note this distinction given the difficulties policy makers will encounter in the early years of the strategy.

"Soft" Indicators

- Commitment to a learning culture
- Communication with all stakeholders
- Training needs identification
- Programme objectives set
- Stakeholder input and ownership of training
- Support of training by key decision makers
- Agreed monitoring and evaluation procedures in place
- Training provider support in place
- Post-training assessments are done.

(Linda Wyse & Associates, 1999)

- Graduates who reported at least one benefit from the course
- Graduates by main reason for doing further study
- Module completers who reported at least one benefit from the course
- Module completers by industry by perceived relevance of training
- Module completers by main reason for undertaking training.

(Student Outcomes Survey, ANTA, 1999)

"Hard" Indicators

- Effect of training on sales and marketing (where applicable)
- Effect of training on the innovation, modification and development of new products and processes
- Effect of training on Australia's balance of trade
- The effect of training on employment and living standards
- The effect of training on domestic research and development.

(National Metal, Engineering & Aerospace Vocational Education and Training Plan, 1995-97)

- Gross annual salary of trainees
- Number of trainees employed in course related occupation / industry
- Trainees continuing in further education
- Trainees and employment duration (the year following training)
- Trainees and improved employment status or position (year following training)
- Trainees and career change expectations (year following training)
- Trainees by career change result (year following training).

(Canberra Institute of Technology, The Key to Employment, A Survey of 1991 Graduates, 1993)

The South Australian Department of Education, Training and Employment, for example, set a target of reducing delivery costs of publicly funded training. 1997 findings indicated an 11 percent increase in student involvement in training and a 12.9 percent reduction in the unit cost of provision (Annual National Report, 1998).

An evaluation of the vocational and education training programme in Australia in 1998 revealed that full time employment among graduates increased by 10 percent after training (1998 At a Glance, 1998). Additionally, 74 percent of indigenous Australians reported that they were working or in further study after graduating from the training programme (1998 At a Glance, 1998).

4.1.5 Some Key Features of and Lessons from the Australian System

This section firstly examines briefly three features of the Australian system. These relate first to the benefits from collective industry responses. Second, decentralisation appears to be a necessary condition for success but is not sufficient for it. The evaluation of the experience in the state of Queensland cited below illustrates this point. Third, the results of evaluating Competency Based Programmes with a view to determining their contribution to VET are described. Finally, this section looks at some possible lessons to be derived from the Australian experience, for South Africa and other developing countries.

Collective industry training responses

The 1995-97 National Metal, Engineering & Aerospace Industry training plan focuses on the benefits of pooling training resources and initiating collective training responses for the industry. This is done through the Queensland Manufacturing Institute, which pools the resources of the industry, TAFE Colleges and University in the State to realise cost advantages in the use of technology for training.

The Role of VET in Regional Australia

Wiltshire and Story evaluated the Queensland VET system in 1997 and their key findings are as follows:

- Poor advocacy of VET in the State.
- Limited research capacity of the VET sector.
- Limited stakeholder access to information. They propose that a database should be created to inform all stakeholders of VET policies, regulations, funding criteria, registration and accreditation requirements, course offerings and events affecting the sector.
- Uncertainty about the role of the public versus private sector within the VET system.
- Lack of accountability in the competitive allocation of funds.

Evaluating Competency Based Training

Competency Based Programmes (CBTs) were evaluated in enterprises across Australia to determine the contribution that CBT has made to the VET sector, the extent to which programmes have met stakeholder requirements and the degree of improvement in skills based work. Enterprises from four sectors were evaluated including services, manufacturing, construction and agriculture, forestry and fishing. The main findings of this study are as follows:

- Close relationships between training providers and enterprises added value to competency based training and ensured that both educational and enterprise goals were met.
- CBT was most effective when delivered by experienced teachers or trainers. The research found that expertise in curriculum pedagogy was crucial.
- CBT was most effective in providing "practical" skills at the technical and operational level. It was less useful in changing the behaviour or attitude of the trainee. The study makes the point that '*attitude is 50* percent of the job' and recommends that future training efforts also focus on enhancing generic skills. (NCVER: Evaluating the Contribution of competency based training).

Lessons from the Australian Experience

Abrahart and Tzannatos (2000:481-484) suggest that the Australian reforms contain three important lessons for developing countries:

Expanding VET without institutional change rarely works

The first object of reform in many developing countries is to expand public sector VET by investing in new facilities, equipment and training materials. Investments also frequently provide for curriculum development and teacher training or for improved employment conditions for those already in the system. All this is done in anticipation of a growing demand for skills even when the projected growth may be quite distant in time or extremely uncertain. Countries assume that once they have made such investments, good returns will follow. However, case studies have

demonstrated that such investments should not be made without greater certainty about future labour market demand.

Australia's experience reflects the same reality, but it also underscores the importance of basing reform on sound institutions. As Abrahart and Tzannatos (2000: 482) state "…without (sound institutions) investments are likely to be counterproductive and turn bad systems into expensive bad systems." One particular problem concerns the relationships among the industrial partners, employers, and unions, and between each of them and the training system, and the government. With the establishment of ANTA, the Australian government sought to engage the employers and unions as integral parts of the executive management of the VET system.

Links with the labour market must be predominant

Australia's experience demonstrates the difficulty of keeping the link between the VET system and the labour market secure and relevant. A great deal of work is required to maintain this link. If the connection with the labour market is weak, the system will fail. Part of the answer lies in forging effective ties with industry as partners in the executive management of VET.

In many countries a tension exists between achieving educational objectives and achieving labour market objectives. The solution in Australia was to amalgamate the players into a single entity—the ANTA. With the establishment of a single national ministry encompassing employment, education, and training, competing priorities were resolved closer to the operating level and had far less chance to create conflict among trainers and confusion among students.

VET financing should support market forces

Allowing market forces to work does not depend only on an institutional framework that involves industry in determining its own training needs. With the establishment of ANTA, Australia has gone farther than most in doing this. Financial mechanisms that will support market directions also are needed. This can be achieved to some extent by ensuring that costs are shared. Too often, however, training levies are seen as a way to expand and strengthen the public sector system. Unfortunately, extracting training levies without any regard to the labour market is too easy.

Costs are best apportioned in a way that enables the buyer to exercise judgement. Competition among suppliers is essential. This again implies a shift in control and management away from the public sector toward employers and VET participants. Industry, in particular, should become the main force behind the development of training standards, assessment procedures and accreditation. However, in the end, industry needs must be determined pragmatically. Accreditation, for example, is important to most employers only in so far as it genuinely provides them with information they would not otherwise have about the type and quality of training being offered. It should not be used as a means of enforcing de facto licensing on training providers, a move that protects public sector providers more than consumers. In short, VET should benefit buyers more than suppliers.

4.2 MALAYSIA

Recent surveys indicate that a high proportion of firms provide their workers with no training or rely exclusively on informal on-the-job training. Marked differences are apparent in the incidence of training by firm size: the proportion of firms that do not provide any training is highest among micro-enterprises, and conversely, formal training is most common among large firms. The most

important reason why firms provide little or no training is they use simple technologies that require few skills. The firms that do train either meet their skill needs in-house or rely heavily on private providers. Public training institutions play a relatively minor role in meeting the in-service training needs of private firms. Among employers providing external training, the most commonly cited external sources are private training institutes, followed by skill development centres, advanced skill training institutes, and buyers and material suppliers. The least common external sources of training are government-run training institutions. The relatively small role played by government training institutes reflects their focus on pre-employment training rather than on in-service training.

Policymakers believe that Malaysian companies under-invest in training, especially in relation to the skill requirements necessitated by rapidly changing technology and growing international competition. Given the limited role of public training institutions in retraining workers and upgrading their skills, the government has implemented two training incentive schemes – Double Deduction Incentive Training and the Human Resource Development Fund – to encourage companies to meet their own skill needs.

Despite the changes to the system, use of the DDIT scheme has remained low, and take-up has been uneven across sectors, firm size, and ownership. Initial use of the HRDF scheme was also low, and take-up varied widely across sectors. It is too early to make firm judgments about whether the HRDF has increased training, but a preliminary analysis indicates that the scheme may have increased the incidence of training modestly.

There is very little information available on national monitoring and evaluation systems in Malaysia. Consequently, this review focuses on evaluations of the Malaysian levy scheme, training performance indicators and critical success and failure factors drawn from the World Bank Country Evaluation and a number of other sources.

4.2.1 Evaluation

The HRDF and Its Effects

In 1993, the Human Resource Development Act was implemented and led to the establishment of the Human Resource Development Fund (HRDF). The main objective of this fund is to ensure that the workforce of Malaysia has the latest knowledge and specialised up-to-date skills, particularly in the manufacturing and services sectors. In order to encourage employers to upgrade the skills of their employees a levy scheme was introduced. The levy scheme allows employers who have contributed to the scheme for a minimum a six months to claim back allowable training expenses from the Fund up to the limit of their total levy payments in any year.

An evaluation by Gill et al (2000) found that the scheme had not been in existence for long enough to effectively evaluate its impact. Nevertheless, the following was concluded from the evaluation:

Take-up rates of the various grants to employers were very low initially, but have increased over time. In addition, take-up rates are much higher among larger firms and within certain occupations / industries such as professional and scientific instruments, general machinery, electrical machinery, ceramics and glass.

The study provides no data on the impact of the levy scheme on levels of firm training, although it does find that registration with the HRDF increases the likelihood of training by firms. In addition, a report based on a visit to Malaysia by a team of inspectors from the Further

Education Funding Council in the UK, concluded that over 1.7 million workers have benefited from retraining programmes as a result of the HRDF (FEFC, 1998).

4.2.2 Indicators for Malaysia

The indicators that were used in the Malaysia Industrial Training and Productivity survey (MITP, World Bank,1997) are as follows:

- The number of hours of training per employee.
- The costs of training are also considered. The survey finds that in-house training is significantly more frequent than the use of external training providers due to the lower cost of the former.
- Placement rates of unemployed "graduates".
- Wage effects of training. This examines the effect of training on the wages that the trainees will receive after training. The survey finds that training has "a positive and significant effect on monthly wages and that roughly one-eighth to one-fifth of the productivity gains are passed on to workers in the form of higher wages".
- Firm-level efficiency. This measures how far the firm is from best practice technology.
- One of the most common indicators of training programme success is the effect that it has on productivity. The survey found that training had a positive effect on firm level productivity.
- Enterprise training levels by industry/sector, which is used to ascertain whether the relevant sectors are undertaking sufficient training, given their different skill needs.

4.2.3 Some Key Features of and Lessons From Training in Malaysia

The findings of the MITP survey (World Bank, 1997) provide useful insights into the Malaysian training system. Some of the key findings include the following:

- ***Firms under-invest in training.*** Only 21% of firms in manufacturing provide formal training. Most firms cited mature technology, which has low skill requirements, as the main reason for doing little training.
- ***Employers play a key role in skills development***. Notwithstanding the conclusion that firms under-invest in training, employers provide in-service training to more workers than traditional vocational and technical institutions.
- ***The private sector is the most important source of training***.
- ***Technology shapes the skill requirements of employers***. The survey showed that firms are more likely to train when they are large, employ an educated work force, invest in R&D, possess technology or know-how licences, have foreign capital participation, use quality control methods, and exposure to foreign markets.
- ***Training raises firm-level productivity***. Firms that train, on average, are about 32 percent more productive than firms that provide employees with no training.

- ***Small and medium enterprises benefit most from training***. The productivity impact for small and medium firms is about 32 and 29 percent respectively, as compared to 12 percent for large firms.
- ***Firms that train also pay higher wages***. Employers that provide training pay wages that are 6 percent higher on average.
- ***The Double-Deduction Incentive for Training Scheme (DDIT) is ineffective in inducing training***. It has been used primarily by MNCs, joint ventures, and larger firms who, arguably, were training already. For these firms, the DDIT scheme meant sizeable windfall gains; for firms that provided little or no training, the DDIT scheme failed to induce employers to begin, or increase provision of, training.
- ***HRDF is effective but non-compliance is significant***. The HRDF provides firms with different schemes to flexibly organise their training efforts and upgrade their training systems. However, non-compliance is high, with as many as 27 percent of eligible firms not registered with, or contributing to, the HRDF. Reasons given for non-compliance or low-take up rates include the following:
  - — The bureaucratic procedures involved in obtaining grants, notably the length of the forms that had to be completed. This problem has been recognised by the HRDC and shorter forms have been produced.
  - — The lack of a training culture.
  - — The willingness by firms to accept the levy as a tax that will not be reclaimed.

4.2.4 Lessons from Malaysia's Experience with VET Reforms

Tan and Gill (2000: 259-260) suggest that there are four important lessons for developing countries.

First, formal training is not widespread even in a rapidly industrialising economy. Surveys show that about one third of firms provide no training for workers, about half rely on informal training alone, and only a fifth provide formal training. Firm size matters: almost one third of extremely small firms provide neither formal nor informal training, but almost all large firms provide some training, generally both formal and informal. The main reason why firms do not train is they do not need to train. They cite as reasons mature technology, the high cost of training, and the availability of skilled workers from schools and other firms.

Second, tax incentives have been given to firms that would have provided training anyway. Despite considerable simplification of the scheme, less than 3 percent of small firms used the government's DDIT scheme for training. Most of the participants were large export-oriented firms, primarily multinationals. Surveys indicate that many foreign-owned would provide training even without such incentives. This raises serious doubts whether tax incentives can encourage training among small domestically oriented firms.

Third, a well-run rebate scheme has increased training only modestly. Despite being efficient in reimbursing claims and making application procedures easy for employers to comply with, the scheme appears to have had only modest training effects.

Finally, private providers are the most common external source for employer-sponsored training. Employer surveys indicate that in-house and private external training have the highest payoffs and that training in government institutions has the lowest productivity. Not surprisingly, the most popular choices among firms are private institutes and joint-venture skill development

centres. The least popular external sources used for employer training are youth training centres and vocational and technical schools. Firms use public institutes that offer advanced training somewhat more frequently.

4.3 THE UNITED KINGDOM

The Secretary of State for Employment is responsible for vocational education and training strategy in the United Kingdom and for training policy in England. The main objectives of the system are to improve investment in training by developing an appropriate and flexible VET system.

The main components of the UK's training framework are

- A compulsory school education system;
- A reorganised further education sector;
- A national framework of qualifications;
- A network of Training and Enterprise Councils (TECs) in England and Wales and Local Enterprise Councils (LECs) in Scotland;
- A network of employer-led Industry Training Organisations;
- A National Advisory Council for Education and Training Targets; and
- An open and distance learning market.
  (Training in Britain – A Guide).

This section draw s mainly on the experiences of the Further Education Funding Council within the further education system in order to consider monitoring and evaluation systems within the UK.

The Further Education Funding Council (FEFC) for England has been established in order to promote further education in England. Funds are allocated to further education and sixth form colleges as well as universities and other institutions that provide further education. (Introduction to the Council, 1996).

4.3.1 Management Systems

4.3.1.1.Strategic Planning

The UK has a vocational education and training strategy based on four priorities, with the overall aim of increasing individual and national economic prosperity through skills development. The priorities of the strategic plan are

- To encourage effective investment in the skills needed for growth;
- To aid people out of work or at a disadvantage in the labour market;
- To encourage and enable young people to develop their full potential; and
- To allow the VET system to respond quickly to changing needs and in a cost-effective manner. (Training in Britain – A Guide, September 1994).

The FEFC has a purpose statement that reads as follows:

> "to secure further education provision which meets the needs and demands of individuals, employers and the requirements of government in respect of the location, nature and quality of provision" (Annual Report FEFC, 1998-1999)

Strategic planning is performed at two levels—for the FEFC as a whole, and within the various regional committees within the FEFC. Individual colleges also compile strategic plans that are reviewed and updated each year. The College strategic plan covers a three-year period and presents its objectives and details the methods to be used to deliver training and contains financial forecasts. The FEFC encourages the colleges to set objectives that are specific, measurable, achievable, realistic and timed correctly. (FEFC Staff Briefing, April 1996). For example, Casterbridge College's continuing strategic objectives for 1997-2000 are

- To achieve a student body of 4200 full-time equivalents (FTEs) by 31 July 2001;
- To improve student retention to 92 percent by 31 July 2001;
- To achieve a "grade 2" for all areas in the 1999 college inspection;
- To achieve the Investors in People award by 31 July 2000;
- To achieve space utilisation of five square metres per FTE by 31 July 2001; and
- To maintain the financial viability of the college by maintaining case days in hand of 40, a current ratio of 2:1, and accumulated reserves of five percent of income.

(Sector Accounting Policies: Specimen Annual Report, 1998-99, p. 5)

Multi-tier Model of Governance—The United Kingdom

Tier 1:Ministry of Education
Policy Development

Tier 2: Further Education Funding Council (FEFC)
Strategic planning (national); allocation of public funding; assessment of quality; ensuring adequate provision

Tier 3: FEFC Regional Committees
Regional planning and monitoring.

Tier 4: Colleges
FET providers. Develop college plans.

Figure 1 overleaf provides an example format used to record and set annual targets for individual colleges.

4.3.1.2 Accountability and Performance Contracts

The FEFC consists of members whom the Secretary of State for Education appoints and who are accountable for the use of public funds allocated to it. The relationship is set out in **"a formal management statement"** between the Department of Education and the Council. The Statement specifies lines of accountability, financial controls, and the Council's financial relationship with colleges (Introduction to the Council, 1996). The FEFC is required to monitor college effectiveness in order to demonstrate the effective use of public funds.

The relationship between the Department of Education and the Council is subject to a policy review every five years (Annual Report FEFC, 1998-1999). In the last policy review, the Department of Education states that it required the FEFC to continue with its core functions. These include allocation of public funding; assessment of quality; and providing adequate further education (Annual Report FEFC, 1998-1999).

4.3.1.3 Funding and Monitoring of Colleges

The FEFC allocates three billion pounds a year to 428 further education and "sixth form" colleges, 58 universities and colleges of higher education, and over 228 other institutions. (Briefing Note to Mr Khetsi Lehoko, FEFC, May 2000). The FEFC's funding allocation for

1999-2000 to each college has three primary strands, which focus on previous years funded activity levels and various growth factors in student participation in colleges. A capital / innovation fund has also been established, which focuses on supporting Colleges in need of

Figure 1. Format for recording and setting annual targets

College code

Qualification type	*Level*	*[Previous year] outcomes*	*[Current year] targets*	*[Previous year] outcomes*	*[Current year] targets*
Long	1	Comp			
		Of which level X			
		Ret (%)			
		Ach (%)			
	2	Comp			
		Of which level X			
		Ret (%)			
		Ach (%)			
	3	Comp			
		Of which level X			
		Ret (%)			
		Ach (%)			
	H	Comp			
		Of which level X			
		Ret (%)			
		Ach (%)			
Short	All levels	Comp			
		Of which level X			
		Ret (%)			
		Ach (%)			

College name 16-18 19+

(FEFC Circular 99/08, 15 February 1999, p.5)

improving their working environment, on Colleges needing to upgrade quality based on the results of formal inspections, on professional development of teachers, managers and governors in the system and to support colleges that "demonstrate outstanding practice" specifically to "support them in using their experience and expertise for the benefit of others". (Chief Inspector's Annual Report, FEFC, 1998-99).

Funds are allocated to colleges according to their number of funding units. The number of units per college depends on the following factors:

- The number of students enrolled.
- The courses being followed by individual students, the student's progress and achievement.
- A tariff which is reviewed by the council every year after it has consulted the sector.

- Colleges can earn units for providing pre-enrolment guidance and for entering learning agreements with each student which set out the education, training and support the college will provide.
- Colleges can earn extra units for providing additional support to students with learning difficulties or disabilities and for subsidising or waving fees for younger students and for adults with low incomes. (Introduction to the Council, FEFC, 1996)

On average, 10 percent of college funds are allocated to pre-enrollment guidance and developing learning agreements, 5 percent to student success, and between 80-85 percent to the cost of delivering training and any additional student support or fee waivers (Briefing Note to Mr Khetsi Lehoko, FEFC, May 2000, p.15).

The FEFC systematically monitors College achievement levels against their own and the Council's targets. The diagram below presents college achievement rates for 1995-96.

Figure 2. Colleges Improving in Achievement Rates 1995-96, 1996-97

College achievement rate 1995-96	*Colleges* No.	*Average improvement* %
Under 40%	15	14
41%–50%	30	8
51%–60%	46	10
61%–70%	33	9
71%–80%	28	7
81%–90%	30	4
91%–100%	9	2
All improving colleges	191	8

(FEFC Circular 99/08, 15 February 1999, p.8)

College retention rates are also specifically monitored relative to the FEFC rates and the Council's target rates. The diagram below presents data on colleges that improved their retention rates during period 1995/96 and 1996/97.

Figure 3. Colleges Improving in Retention, 1995-96, 1996-97

College retention rate 1995-96	*Colleges* *No.*	*Average improvement* *%*
Under 70%	24	6
71%–80%	60	3
81%–100%	59	2
All improving colleges	143	3

(FEFC Circular 99/08, 15 February 1999, p.8)

Financial Forecasts. The FEFC requires all colleges to complete financial forecasts for the purposes of internal planning and monitoring. The financial forecasts are reviewed in conjunction with strategic plans and other information to determine the financial health of the college and to compare plans against expenditures. The skills of College senior management teams are taken very seriously in the system and in 1996 a series of seminars were held for financial managers in all colleges to upgrade these skills across the system and to share best practices. (FEFC Staff Briefing, April 1996).

4.3.2 Performance Indicators

The FEFC uses the following five performance indicators for evaluation:

- Achievement of funding targets in the strategic plan;
- Enrolment trends and targets;
- Retention rates;
- Achievement rates, in terms of individuals attaining learning goals; and
- Contribution to national targets –achievement of NVQs or equivalent.
  (The Further Education Funding Council, March 2000 and Circular 94/31)

For 1998-99, the FEFC set the following key operational performance indicators:

- Monitor planned further education provision on an annual basis, and by the beginning of the following teaching year:
  — Address inadequate or insufficient education provision;
  — Identify any desirable changes in the pattern of participation;
- Confirm 90 per cent of provisional funding allocations by the end of May in each year; and pay institutions accurately and on time;

- Maintain an accurate database of colleges' major capital projects and an up-to-date, published register of proposed projects and commercial sector interest;
- Achieve a year-on-year increase in units of student activity provided by institutions involved in further education combined with better value for money;
- Inspect 108 sector colleges, 13 external institutions and 14 specialist colleges in the year; and produce 85 per cent of reports within 10 working weeks of the inspection;
- Decide on the placement of students with learning difficulties and/or disabilities at specialist establishments within six weeks of the receipt of complete information in 95 percent of cases; and
- Provide substantive replies to 90 percent of correspondence requiring a reply within 15 working days.
  (The FEFC Corporate Plan, 1998-2001)

4.3.3 Training

Training in the UK is overseen by the National Training Organisation (NTO) Council which is responsible for the industry-based NTOs. The NTO Council reports to the Department of Education and Employment (DFEE). The NTOs are the UK equivalent of the SETAs.

The training sector has recently undergone considerable restructuring. From the original 182 industrial training organisations, approximately NTOs have been formed. These eighty in turn, have been encouraged to group themselves into 17 larger clusters.

The DFEE has used a combination of pressure and support to bring about the development of the NTOs. Government does make available some funding for their activities every year (around 10.5m pounds) and does sponsor some of the costs of the NTO Council. Funds left over after their abolished levy-grant system can be accessed by a registered NTO in that field and this has acted as a carrot. The system has not had the "stick" of a levy-grant system to galvanise the field, but they use the publication of an annual government agenda for skills development and the setting of national priorities to direct the NTOs. In addition, the NTOs are the only business bodies that are formally recognised by the government. Furthermore, the idea that occupational standards should be more widely used for selection, recruitment and appraisal of staff has promoted the need for training organisations.

4.3.4 Some Key Features of and Lessons from Training in the UK

Although the United Kingdom is a unitary state, in the field of VET it has opted for a decentralised model of governance to foster efficiency and effectiveness. The key institution in the system is the FEFC which is responsible for system-wide planning and which ensures that the objectives of the VET system are well articulated and disseminated to the education training providers.

An important characteristic of the system relates to accountability which is built into every tier of the system. The training providers are accountable to the regional FEFC committees and to the national FEFC. The FEFC ensures that colleges set objectives that are measurable and achievable. The FEFC in turn is accountable to the Ministry of Education with whom it concludes a "formal management statement" which provides its mandate.

Two other key features of the UK system relate to the development of collaborative relationships and to quality improvement in the system.

Collaboration

The FEFC collaborates with a variety of partners, and has developed local lifelong learning partnerships and other types of strategic partnerships. This is used as a means of coping with high training demands and reducing the impact of inequalities between colleges. (Annual Report FEFC, 1998-1999).

Quality Improvement

The FEFC has formulated a quality improvement strategy to support colleges in raising the standards of their work. This includes

- Asking colleges to set targets for student retention;
- Publishing benchmark data;
- Establishing a quality improvement unit;
- Re-inspecting unsatisfactory systems; and,
- Dissemination of good practice.
  (Annual Report FEFC, 1998-1999).

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Technical Report

Methodologies for the Appraisal of the National Skills Development Strategy

SUBMITTED TO
USAID/South Africa

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Contents

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ILLUSTRATIONS

Acronyms

CBA	cost benefit analysis
CBR	cost benefit ratio
CEAc	Central Economic Advisory Council
CGE	computable general equilibrium
DoL	Department Of Labour
GDP	gross domestic product
GEAR	growth, employment and redistribution
IRR	internal rate of return
NPI	National Productivity Institute
NPV	net present value
NSDS	National Skills Development Strategy
RDP	Reconstruction & Development Programme
SAM	social accounting matrix
SETA	Sectoral Education & Training Authority
SSA	Statistics South Africa

Preface

This project was undertaken by JE Austin Associates (the technical lead) and Nathan Associates, under the Nathan–MSI Segir–GBTI Joint Venture funded by USAID. The project team comprised Pundy Pillay (Team Leader), Lindsay Falkov (*SkillsWorks*, Johannesburg), David Mullins (Conningarth Consultants, Pretoria), Edward Brooke (Research Associate, Nathan Associates) and Kate Grubb (Research Associate, JE Austin). Martin Webber and Kevin Murphy, JE Austin Associates, Washington, D.C., oversaw the project.

The project comprises two parts: Part 1 is an international review of training systems with a particular emphasis on monitoring and evaluation. Part 2 reviews and proposes methodologies for assessing the National Skills Development Strategy. The principal researcher for Part 2 was Dr David Mullins of Conningarth Consultants, Pretoria.

1. Background: Some Economic Scenarios

The South African economy needs to embark on a higher economic growth path. Although necessary, a mere acceleration of growth in the Gross Domestic Product (GDP) will not address the major social and economic inequalities present in this country. Hence, a restructuring of growth is required towards *sustainability* greater *social equity* and *increased labour absorption*.

In its *Growth, Employment and Redistribution* (GEAR) strategy, government envisaged a macroeconomic environment conducive to job-creating, economic growth. The strategy delineated macroeconomic projections and economic policy targets, and assumed particular responses from business, labour and foreign investors to attain an average annual real economic growth rate of 6 percent and the creation of 400,000 additional employment opportunities per annum between 1997 and 2000.

Central to GEAR is the promotion of sustainable and job-creating economic growth, supported by

- Fiscal and monetary discipline;
- Tax reform and investment-friendly tax incentives;
- The gradual abolition of exchange controls;
- A competitive exchange rate;
- The promotion of international competitiveness;
- The acceleration of tariff reductions;
- The restructuring of state assets;
- An expansionary infrastructural programme;
- The upliftment of skills; and
- Greater labour market flexibility.

Since the announcement of GEAR in 1996, significant progress has been made with, inter alia

- A reduction in the budget deficit;
- A consistently restrictive monetary policy which resulted in the resumption of a downward inflation trend;
- The relaxation of exchange controls;
- The prevalence of a competitive exchange rate;
- The introduction of industrial support measures;
- The lowering of protective tariffs;
- The privatisation of state assets; and
- The delivery of social rdp-related objectives.

These aspects of macroeconomic policy triggered significant structural shifts in the economy, thereby improving industry's globalisation drive, advancing exports towards non-traditional higher value-added finished goods and permitting a generalised retention of South Africa's broad industrial base.

Unfortunately, the growth and employment projections of GEAR have not been realised. In order to accelerate the currently pedestrian economic growth rate, a focus is thus required on the *micro* or *sectoral level*. Value may be derived from highlighting the sectoral challenges envisaged by higher economic growth, as challenges for the government, business and labour leadership to improve the performance of the South African economy.

As indicated earlier, the government has made significant progress with the implementation of various critical policy initiatives that will ensure a higher level of performance by the South African economy. The majority of these measures are destined to improve the economy's growth potential by raising the efficiency/productivity of the production factors (labour and capital). [This is also referred to as supply-side supportive measures].

Recent studies have indicated the critical role that a more efficient and productive labour force has to play in realising South Africa's daunting employment and welfare goals as contained in GEAR.

The following table, an excerpt from a study by ABSA[1] Bank, shows the major challenges facing the South African economy over the next 15 years.

Table 1. Demographic and Labour Sector Developments (Annual Averages)

		1989-1993	1994 - 1998	1999 – 2003			2004 – 2015		
				Cons	Base	Opt	Cons	Base	Opt
Total population[1]	million	35.8	39.9	45.4	45.4	45.4	50.5	50.5	50.5
	y/y %	2.3	2.2	1.8	1.8	1.8	0.9	0.9	0.9
Total labour force	million	12.10	13.79	15.69	15.69	15.69	19.30	19.30	19.30
	y/y %	2.6	2.7	2.5	2.5	2.5	2.4	2.4	2.4
Total formal employment	million	8.0	7.6	7.1	7.4	7.6	6.9	8.7	10.1
	y/y %	-1.3	-1.1	-0.4	1.3	2.2	-0.5	2.1	3.8
Employment: public sector	million	1.79	1.76	1.72	1.75	1.79	1.65	1.88	2.12
	y/y %	0.3	-0.2	-0.6	0.3	1.0	-0.4	1.1	2.6
Employment: private sector	million	6.19	5.85	5.41	5.63	5.80	5.24	6.77	7.93
	y/y %	-1.8	-1.4	-0.3	1.6	2.6	-0.5	2.4	4.2
Unemployment (not formally	million	4.1	6.2	8.6	8.3	8.1	12.4	10.6	9.2
employed)	y/y %	10.6	7.5	5.0	3.7	2.8	4.0	2.6	0.8

[1] Assuming maximum AIDS infection rate of 15 %

NOTE: Cons=Conservative; Base= Baseline; Opt=Optimistic

Table 1 shows that the unemployment situation (in absolute terms) can only be turned around if the economy realises its optimistic scenario. What is important to note here is that an important precondition for realising such an optimistic scenario is that some very significant reform initiatives are realised, including those on the labour front. These are summarised in Table 2 – also an excerpt from the same ABSA publication:

1) Prospects for the South African Economy, 1999 – 2015; ABSA, October 1999. [ABSA Group Economic Research].

Table 2. Economic Scenarios and Preconditions

		1989 - 1993	1994 - 1998	1999 – 2003			2004 – 2015		
				Cons	Base	Opt	Cons	Base	Opt
Real general government investment	% change	-17.7	4.0	4.7	10.1	16.2	1.5	2.9	6.1
Highly skilled labour/total employment ratio	% change	2.3	2.6	1.0	2.0	2.4	1.0	2.0	2.6
Real parastatal investment	% change	-17.3	17.0	-3.4	-1.2	1.6	1.3	3.0	5.0
Real government consumption	% change	1.9	1.7	1.2	1.8	2.3	0.9	2.9	4.1
Total labour force	% change	2.6	2.7	2.5	2.5	2.5	2.4	2.4	2.4
Cost of labour/cost of capital ratio	% change	2.5	1.9	2.6	1.2	0.6	2.5	1.0	0.4
Number of strikes	% change	90.4	94.9	69.3	71.4	73.7	25.3	28.4	31.8
Household debt/household disposable income	% change	50.9	58.8	61.0	61.0	60.7	61.6	61.2	60.7

ABSA's study clearly shows how important it is to raise the skills level of the labour force as a precondition for reaching the higher levels of economic growth that will significantly reduce unemployment. From Table 2 it is evident that the highly skilled labour/total employment ratio will have to increase considerably if the optimistic scenario is to be obtained. The ratio should improve by 2.4 % per annum between 1999 and 2003 and 2.6% per annum between 2004 and 2015. Furthermore the analysis shows that it is important that the change in the cost of labour/cost of capital ratio must be reduced in order to increase the labour absorption capacities of the economy. The role that a better-trained labour force, at all levels, must play to achieve these goals, is indispensable.

One important policy initiative that is still "outstanding" so to speak is the upliftment of skills. This aspect requires substantial work in the field of legal and institutional reform in order to implement a nation-wide sectorally-driven, vocational, workplace-situated education and training program. Such a national Skills Development Strategy has been designed by the Department of Labour, which is now embarking on its implementation.

2. Objective of the Study: Measuring the Impact/Effectiveness of the National Skills Development Strategy

The Department of Labour (DoL) has embarked on the implementation of a new skills development strategy which includes the creation of 25 Sector Educational and Training Authorities (SETAs) that will encourage and direct investment in worker training. A payroll levy (set initially at 0.5% and rising to 1% in April 2001) implemented in April 2000 is expected to generate 1 billion Rand in its first year of operation for a National Skills Training Fund that will finance workplace training and the administrative costs of the SETAs.

The SETAs will not conduct training. They will work with their industries to develop sector skills plans, certify the courses offered by training providers, and serve as the conduit through which companies access funds in the National Skills Fund. It is envisaged that this program will encourage investment in skill development, redress historic training inequalities, provide portable skills, and contribute to more transparent and flexible labour markets.

The DoL's National Skills Development Strategy constitutes an integral part of the government's human development investment programs. Through these programs, the government is investing resources in its citizens in the present time in the expectation that they will be more productive in the future (thus benefiting society as a whole).

One of the general techniques commonly used to evaluate the impact of training and educational investment is cost-benefit analysis (CBA). However, CBA is a very narrowly based technique which only takes into account the direct effect of a program or project. However, policymakers may prefer to know about the secondary impacts of their decisions.

To analyse the broader implications of the program or project, economic analysis techniques other than CBA are also required. However, some programs and projects do not lend themselves easily to such analyses, requiring many broad assumptions which may be unrealistic.

After consultation, the Department of Labour (DoL) indicated that this research project should not only look at cost-benefit analysis but should also focus on methodologies that analyse other economic aspects of the National Skills Development Strategy (NSDS). Further, the research should focus on the identification of indicators to monitor the performance of the NSDS.

To satisfy the various objectives of the DoL, this report focuses mainly on the establishment of a package of methodologies to analyse the feasibility of the NSDS from a narrow financial perspective to a wider economic and distributional analysis. The scope of work will thus concentrate on three different analyses, namely:

- Social cost-benefit analysis
- Economic and distributional analysis, and
- Performance indicators.

2.1 SOCIAL COST-BENEFIT ANALYSIS (CBA)

CBA is considered to be the most appropriate economic tool to analyse programs and projects where the majority of the costs occur at the beginning of the program or project and the benefits normally occur over a period of time. The future streams of costs and benefits are made comparable by discounting the streams to present day values.

From the discounted cost and benefit streams it is possible to determine important "performance indicators" such as the internal rate of return (IRR), the net present value (NPV) and the cost-benefit ratio (CBR). Such analyses will show whether the proposed program or project is viable from a narrow economic point of view.

Pre- and post CBA analysis can be performed on the SETA Programme. Pre-CBA analysis refers to a situation where the program is in a planning phase and the policy makers wish to appraise the net economic advantages of such a program. The disadvantage of the pre-CBA analysis, in the absence of data, is that most of the information needed for the analysis will be based on assumptions.

Post-CBA analysis is used where programs have already been instituted for a considerable time period. For instance, the income of persons who attend a specific SETA training program could be compared with those who have not attended such programs.

Multiple regression analysis can then used to analyse the difference in income of the two groups of individuals and to estimate the benefits to those attending a specific skills development program relative to those who had not.

2.2 ECONOMIC AND DISTRIBUTIONAL ANALYSIS

The types of cost-benefit analyses described above typically only account for effects on persons and markets directly affected by the project. This approach, referred to by economists as "partial equilibrium" analysis, considers supply and demand relationships in one or a few isolated markets. Such analyses assume that other markets are either unaffected by a project, or that any effects in these markets are unimportant for the purposes of net benefit estimation.

Other macroeconomic models recognise that many economic sectors are interrelated, in terms of competing for inputs (e.g. raw materials, energy, labour), providing competing goods or services, or providing complementary goods or services. Such models can be used to assess these types of "ripple" effects on a region's or nation's economy. These models can also provide decision-makers with other types of information such as the influence on tax revenues, employment, productivity, competitiveness and new investment.

These macroeconomic tools include two "general equilibrium" approaches: Input-Output models and Computable General Equilibrium (CGE) models. Unlike partial equilibrium analysis, these models attempt to capture the interactions of a project's direct and indirect impacts throughout an economy. The Social Accounting Matrix (SAM) is a third type of approach that can be applied in a project of this nature. These differ from Input-Output and CGE models through their focus on social rather than economic criteria. Although much more comprehensive, the SAM is based on the same principles as the conventional Input-Output Table and to some extent is a logical extension of it. The SAM however, differs from the Input-Output table in a few important respects. Besides information on the inter-dependence between the different sectors of the economy, which is also part of the Input-Output Table, the SAM also includes detailed information on the income and spending patterns of households. The SAM therefore lends itself

much more usefully to quantifying the income distributional effect of various institutions and income categories of a specific development initiative such as the SETA Programme.

In the South African public and private sectors these economic tools are being used by economists and statisticians on a regular basis for the appraisal of core investment programs and projects.

2.3 PERFORMANCE INDICATORS

An important aim of this study is to provide the Department of Labour and other stakeholders with performance indicators that can be used to monitor performance and to inform policy and practical implementation. The indicators should, inter alia, measure the impact on production, employment, productivity, and competitiveness.

From earlier sections it is evident that in searching for an appropriate tool/instrument to measure the impact and effectiveness of the national skills development strategy it may not be necessary, practical or cost-effective to undertake all of the CBA, measuring macroeconomic impact and distributional analyses.

To overcome this problem it is proposed that use be made of various other quantitatively orientated analytical methods used in econometric studies. These methods are mainly based on the basic interrelationships that exist in the economy between the various economic aggregates and variables. These interrelationships can be quantitatively determined through statistical methods. Building on the CBA principles and linking up with the broader economic theory of inter-dependencies, it is possible to construct suitable performance monitors pertinent to the workplace training initiative. It will be shown that these performance indicators can also serve as target parameters as part of the training strategy.

Due to the nature of the proposed performance monitors, it is foreseen that they could be constructed for each SETA separately, regionally and for the training programme in total.

It is also imperative that in order to bring this proposed system into operation, an appropriate computerised database be created and kept up-to-date.

3. Social Cost Benefit Analysis (CBA)

3.1 CBA IN PRACTICE

3.1.1 The Need for CBA

For both governments and individuals, the choice between different ways of investing resources rests to a great extent on an evaluation of the costs and benefits associated with the investments. The alternatives will differ as to the magnitude of the costs that must be incurred, the expected benefits that will be generated, the time scale of both costs and benefits, and the uncertainty or risks surrounding the project. Cost-benefit analysis is a technique by which these factors can be compared systematically for the purpose of evaluating the profitability of any proposed investment.

An investment is considered a profitable use of resources for the individual or society as a whole when the expected benefits exceed its costs. Thus, in choosing between alternative investments, individuals or governments try to evaluate both costs and benefits and identify the investments that will achieve the greatest possible benefit in relation to cost.

The technique of cost-benefit analysis has been developed to make this evaluation as systematic, reliable, and comprehensive as possible and to eliminate the need for guesswork, hunch or intuition (Psacharopoulos & Woodhall, 1985). Cost-benefit analysis is an aid to judgement, however, not a substitute for it, since future costs and benefits can never be predicted with certainty, and measurement, particularly with respect to the likely benefits of a project, can never be completely precise. Therefore, judgement must be used in the economic appraisal of investment projects. The value of cost-benefit analysis is that it provides a framework for evaluating both the magnitude of the costs and the benefits, and their distribution over time. Such a framework allows the judgements that must be made in assessing the likely yield of an investment to be explicit rather than implicit and possibly vague.

For example, judgements must be made about the real value of the resources to be used in an investment project since their real value may not be fully reflected in their market price because of distortions in the market, such as exchange controls or government control of wages. Judgements of this type can be incorporated into the appraisal by means of shadow prices, which are intended to reflect the real value of resources to the economy in the light of the social and economic objectives of a country. Shadow prices represent the weight given to different objectives, for example to future growth as opposed to present consumption.

All cost-benefit analyses use discounted cash flow techniques to compare the discounted present value of both costs and benefits, and to determine whether the benefits accruing from an investment project will be greater than the costs when both are measured in terms of present values. What is needed for such an appraisal is a convenient summary statistic that expresses the relationship between costs, benefits, and their distribution over time. This information can be expressed in three ways, which yield the following investment criteria: the benefit-cost ratio, which is the ratio of the sum of discounted future benefits of a project and the discounted value

costs; the net present value, which is the value of the discounted benefits of a project minus the discounted value of its costs; and the internal or economic rate of return, which is the rate of interest that equates the discounted present value of expected benefits and the present value of costs.

The evaluation of projects is often a difficult task since costs and benefits do not occur only once but appear over time. Furthermore, costs and benefits are often hidden, making them hard to identify; moreover, they are also frequently difficult to measure. The same problems occur when the decision-maker has to make a choice between a number of mutually exclusive projects intended to achieve the same goal via a number of different routes. These problems are not limited to capital projects; they also occur when decisions have to be made regarding the merits of current expenditure programmes.[2)]

The introduction of a human investment program such as the NSDS would contain economic costs and benefits to society. The decision-maker (in this case, the government/Department of Labour) should therefore determine what should be considered a benefit of and what a cost of the skills development strategy, from both the individual standpoint and that of society in order to implement and manage a human investment program efficiently.

3.1.2 CBA and Human Resource Programs

Gramlish (1981) presents a list of the benefits and costs of a typical human investment program. Table 3 shows entries first for the individuals receiving the human capital investment, then for all others in society, and finally for the sum of the two.

Table 3. Benefits and Costs of a Human Investment Program

	Individual	Others	Society
Benefits			
Increase in earnings after tax	✓		✓
Future increase in taxes paid		✓	✓
Non monetary satisfaction	✓		✓
Costs			
Tuition costs	✓		✓
Costs of bursaries		✓	✓
Higher living expenses	✓		✓
Earnings foregone after tax	✓		✓
Taxes foregone		✓	✓
Transfer payments foregone	✓	✓	

In this way a distinction is made between those individual benefits and costs that reflect net social gains and losses from those that reflect only transfers from or to other members of society.

The first two items in the table record the future increase in income of the individuals in whom the investment is being made. For this calculation individuals are assumed to be paid what they are worth in the market place – hence if their income rises, this is assumed to reflect their

2) See Central Economic Advisory Council (CEAC); Manual for Costs-Benefit Analysis in South Africa; 1989.

increased productivity, and therefore that would be regarded as a benefit of the human investment program. But individuals do not reap all of the benefits of their greater productivity: since they pay higher income taxes on their higher income, individuals gain the benefit reflected by future after-tax income increases (1), and other members of society gain the benefit reflected in future income tax increases (2).

The next item is non-monetary satisfaction, which shows that education, training, or human capital investment is not valued solely for its impact on income. Education may enable individuals to get jobs they like, even if those jobs do not pay any more than the jobs they would have had without the training. In this case the individuals are clearly better off, and since nobody is worse off, society gains as well, even though the form of the payment is in (non-monetary) units of enjoyment instead of money.

On the cost side, the most obvious one is the explicit amount paid for education/training by the students (tuition, 4) and by others (bursary costs, 5).

These payments measure the training institution's resource cost of providing the education. To this is added the higher living expenses, if any, incurred when students live away from home (6), another resource cost.

The next three items refer not to explicit costs but to opportunity costs. When individuals attend educational institutions, they may have to give up their job or at least reduce their working hours. They sacrifice current earnings to get an education, and these current earnings reductions are sacrifices in income to the individual and consumption goods to society just as much as the explicit out-of-pocket costs. Hence item 7 refers to inclusion in individuals' costs, their loss of earnings after tax, and item 9 includes any losses in transfer payments, such as public assistance or unemployment insurance when they attend school. Others in society give up the benefits of taxes students would have paid if they had opted not to be trained/educated. Thus they lose the taxes students would have paid on foregone earnings (item 8), but then they gain the transfer payments foregone (item 9).

Table 4 shows a cost-benefit analysis undertaken of the Job Corps, a long-running, intensive programme of remedial education, training and other services for highly disadvantaged youth in the United States (Grubb & Ryan, 1999). A summary of the results is presented in the final column of Table 4.

The benefits of the programme comprised the increased output produced by members, estimated as the increase in earnings caused by the programme (US$ 4653) as inferred from statistical analysis of outcomes for participants relative to members of a carefully matched comparison group. The other important area of benefit was a reduction of criminal activity, a social benefit that lacks a ready market price for valuation purposes, but for which a shadow price was developed from evidence on the costs imposed on society by criminal activity. Second-order benefits were estimated to arise primarily from reduced use of drugs and alcohol, to which are added the savings in resource costs associated with reduced dependence on public income support and social services. Other benefit categories were considered too marginal or too difficult to cost, but programme effects upon them were generally favourable. Total quantified benefits to the entire economy, after discounting across the evaluation period, were estimated at US$ 7343 per participant. Against those had to be set the resource costs of running the programme, at US$ 5 070 per capita, leaving a net benefit to the economy and society of US$ 2273 per capita.

Table 4. Benefits and Costs per participant, Job Corps, USA (1977 dollars)

Component	Participants (1)	Rest of Society (2)	Whole Economy (1) (2)
Benefits			
Output produced by members	3 397	1 255	4 653
Dependence on transfers	- 1 357	1 515	158
Criminal Activity	- 169	2 281	2 112
Drug and alcohol use	0	30	30
Utilisation of alternative services	- 49	439	390
Other benefits	+	+	+
Total benefits	**1 823**	**5 520**	**7 343**
Costs			
Operating expenditures	- 1 208	5 351	1 449
Opportunity cost of participant Labour	728	153	881
Unbudgeted Expenditures	- 185	231	46
Total costs	**- 665**	**5 736**	**5 070**
Net benefits			
Net present value (benefits less costs	2 485	- 214	2 271
Benefit-cost ratio	1.82	0.96	1.45

SOURCE: Grubb & Ryan, 1999:65

Cost-benefit analysis estimates the effects of training upon economic efficiency. When the criterion of a positive present value of net benefits is satisfied, a programme is judged to yield to the economy benefits in excess of its costs, and as such to represent a worthwhile use of scarce resources.

An important ingredient is the comparison of benefits to costs. That is, a programme may be effective, in the sense of creating economic and non-economic benefits for participants, but these effects may not be worthwhile if they are less than the costs involved. The criterion that benefits should outweigh costs is an application of the concept of economic efficiency; thus a programme may be *effective*, in the sense of creating net benefits for participants, but not *efficient* if its costs outweigh the benefits.

The use of multiple benefit categories and the comparison to costs make cost-benefit analysis more meaningful than the 'single-outcome' evaluations (e.g. the effects of a training programme on earnings) that dominate the academic evaluation literature.

3.1.3 Limitations of CBA

It is important to understand that CBA is not a substitute for the political system as a mode of making collective decisions. According to Schmidt (1989), CBA is at best a tool to aid in making comparisons between policies and in estimating the results of various policies.

The limitations of cost-benefit analysis itself must also be recognised. At the practical level, major empirical problems arise in such areas as: identifying a suitable range of outcome categories and estimating effects within each; finding suitable 'shadow prices' with which to value benefits, particularly those measured in physical units (e.g. employment rates, crime rates); identifying displacement and externalities; establishing the appropriate discount rate to use to

aggregate across time; and establishing and valuing the costs associated with the intrinsic uncertainty of project outcomes (conceived, for example, as the potential variability of net benefits around 'best estimates'). An appropriate response to this range of problems is not to ignore them, but rather to bring to bear on them whatever information is to hand (e.g. using the resource costs of imprisonment as a guide to the value of reductions in criminality) and, when that information is particularly weak, to estimate the sensitivity of net benefits to alternative assumptions about key imponderables, such as the social discount rate or shadow prices for non-economic benefits, rather than either making unique arbitrary assumptions or excluding them altogether. Other limitations of CBA are described below.

a) Results condensed to one number

A common complaint about cost-benefit analysis is that it collapses a large and intricate story into a single number, such as the internal rate of return (IRR), or the net present value (NPV). There is truth in this criticism, even though the use of such a summary indicator is simply another way of saying "yes" or "no", which analysts and advisers must ultimately do.

Nonetheless, decision makers who base their judgements solely on a reported rate of return may well deceive themselves. The rate of return or the net present value is a relative statement of a project's merit, not an absolute one. Such measures may sometimes be quite sensitive to the way in which the alternative solutions compared have been defined. Decision makers should also understand the nature of the information used, the degree of confidence that can be placed on it, and the basic approach used in the evaluation of costs and benefits in the first place (Anandarup; 1990).

b) Availability of data

Cost-benefit analysis is aimed at decision-making in respect of projects to be undertaken in the future and therefore involves projections and assumptions regarding future developments. It is therefore crucially dependent on the availability of reliable data.

However, CBA can still be useful in programs and projects where it is difficult to measure costs and benefits due to the absence of reliable data. Although it could be difficult to judge a project's merits with much confidence, CBA could provide indications of what the maximum costs and the minimum benefits should be for the project to be acceptable.

c) Narrow-based tool

CBA falls within the ambit of partial equilibrium analysis and is a technique that in its standard form takes into account only the direct impact on the immediate sphere of influence of the project. As discussed in later sections, General Equilibrium analysis as embodied in Input-Output models and Social Accounting Matrices, is more efficient to evaluate the broader consequences of projects or programs.

d) Distributional issues

A further objection to cost-benefit analysis runs along these lines: economic efficiency is all very well, but training should be assessed on other criteria as well. Alternative objectives include the distributional, the educational and the fiscal. For example, a training programme may help the disadvantaged even if it is a loss for the economy as a whole, and this may be regarded as a

sufficient merit for it to be supported. Or, training may contribute to personal development by encouraging young people who would otherwise have left school to stay on, learn more and enjoy more and better personal development, quite apart from any associated economic benefits. Or, again, a training programme's effect on public revenues, local activity, etc., may be politically important even when it has no efficiency or equity effects to speak of.

The need to expand the range of evaluation criteria is important. To some extent, cost-benefit analysis can deal with the need, to some extent it cannot. The area of its competence overlaps with distributional issues, while the area of its unsuitability concerns educational ones. Cost-benefit analysis has found no ready way to include purely educational objectives and outcomes; and it excludes strictly political objectives from consideration.

Cost-benefit analysis can in practice accommodate consideration of the distributional effects of training in two ways. The first is to calculate net benefits for different groups of participants. For example, cost-benefit analysis of training programmes in the US has found that net benefits were highest for adult males, followed by adult females, while net benefits for youth were actually negative.

More pertinent is the degree to which the programme has at least benefited its participants, whether or not it has benefited the economy as a whole. Cost-benefit analysis addresses that issue by distinguishing benefits to participants from those to the rest of the economy. In the case of the JobCorps evaluation in Table 4 above, columns 1 and 2 reflect the division of the programme's overall costs and benefits between participants and other members of society – with the latter comprising both the taxpayers who fund the programme and other public services, and, in this case, the citizens who suffer from the criminal activity that the programme reduces.

Other members of society are seen to gain more from the JobCorps, in terms of gross benefits, than do participants. Non-participants enjoy benefits from: 1) the higher output of ex-participants, by way of the latter's increased income tax payments; 2) the reduced requirement for public spending on income support and other services to participants; and 3) the lower criminal damage done to them by participants. But as non-participants have to pay the taxes required to set up and run the programme, they lose marginally from it overall (US$214 per participant), and the net benefits of the programme accrue primarily to participants (US$ 2 485 each).

It is worth noting that in a cost-benefit accounting framework such as that in Table 4, some benefits to non-participants are treated as transfers from participants, as those benefits lack any equivalent from the standpoint of the economy and society as a whole. For example, the loss to participants arising from reduction in their welfare income (US$ 1357 per head) is closely paralleled by the gain in income (US$ 1515) attributed to non-participants, resulting from their correspondingly lower tax requirements. The difference between the two, US$ 158, represents the savings in resource costs arising from the reduction in welfare transfers – and only that part is relevant to the efficiency assessment (column 3, Table 4).

The distinction between participants and non-participants matters from the distributional standpoint primarily for public programmes of remedial training that are targeted on disadvantaged groups, as participants can then be taken to be poorer than non-participants. For training more generally, the distinction between the two groups is of secondary or no importance for distributional concerns, and other methods must be used.

In the best of all possible worlds, publicly funded training programmes provide net benefits to both participants, in the form of future earnings, and to taxpayers, in the form of enhanced future taxes and decreased social costs (of crime and the like). In practice, different programmes produce different mixes of efficiency and distributional effects.

3.2 CBA METHODOLOGY

This portion of the document is rather technical and is therefore attached separately as Annex A. The methodology explained in this annex is very much in line with the status quo of CBA in South Africa as being used by institutions such as the Development Bank of Southern Africa and the Department of Water Affairs and Forestry.

3.3 COST-BENEFIT ANALYSIS AND THE NATIONAL SKILLS DEVELOPMENT STRATEGY

The costs and benefits of a SETA Programme can be defined as follows:

3.3.1 Costs

While the calculation of training costs is relatively easy; it is more difficult to decide which cost items to include in the analysis, as there is still no generally accepted procedure for determining costs that are easy to use and likely to be accepted.

The costs of a particular SETA Programme may be defined as the total funds that are paid by the Department of Labour and by businesses in a specific time period to a specific SETA. These costs therefore include the overheads to operate the SETA, the direct cost to present the various training courses the compensation for the participants and the extra costs incurred by business in order to comply with the new payroll tax and the SETA Programme. From the perspective of business, costs would be seen as the cost of the new tax, plus other costs of compliance (see Exhibit 1).

The acquiring of capital assets by a SETA, for instance, buildings, furniture and computers should be costed according to normal accounting practices to include, for instance, the depreciation of assets.

3.3.2 Benefits

The benefits of the SETA Programme should be similar to the benefits of human resource programs in general. The benefits of training are gained by individuals, by enterprises in particular and by society in general.

Individual benefits include increased earnings, improved prospects for occupational mobility and non-monetary satisfaction.

According to Billet's (1998) study of the economics of training in 15 OECD member states, the majority of enterprises believed or acknowledged that staff training does bring returns in the areas of

- Productivity improvements;
- Greater workforce flexibility;
- Savings on material and capital costs;
- A more motivated workforce; and

Improved quality of the final product or service.

Exhibit 1. Cost Associated with Training

According to Robinson and Robinson (1989), five categories of expenses can be identified in any training program:

Direct costs

These are costs directly associated with the delivery of the learning activities. They include course materials (reproduced or purchased), institutional aids, equipment rental, travel, food and other refreshments, and the instructor's salary and benefits. Such costs are so directly tied to the delivery of a particular program that if the program were cancelled the day before it was planned to conduct it, such costs would not be incurred.

Indirect costs

These costs are incurred in support of learning activities, but cannot be identified with any particular program. Even if the program were cancelled at the last minute, such costs could not be recovered. Examples would be costs for instructor preparation, clerical and administrative support, course materials already sent to participants, and time spent by the training staff in planning the program's implementation.

Development costs

All costs incurred during the development of the program are included in this category. Typically, they include the development of videotapes and computer-based instructional programming, design of program materials, piloting of the program, and any necessary redesign. This category also includes the cost of the front-end assessment, or that portion of the assessment directly attributed to the program. In addition, the costs of evaluation and tracking are included.

If a program is to be implemented for a few years, the cost is often amortised over that period. For example, one-third of the development cost may be charged off in the first year of implementation, one-third in the second year, and one-third in the last year. Otherwise, there is a real "bulge" in the budget, because of development costs during the first year.

Overhead costs

These costs are not directly related to a training program, but are essential to the smooth operation of the training department. If audio-visual equipment has been purchased specifically for a department, there is a cost to maintain that equipment. Some portion of that annual cost should be charged to the various training programs. If classroom space is available, there is an overhead cost for supplying heat and lighting. The cost of supporting that space for days when the classroom is used for particular courses should be charged to those programs.

Compensation for participants

These costs comprise the salaries and benefits paid to participants for the time they are in a program. If the program is two days long, salaries and benefits for participants for those two days are costs of the program.

For purposes of CBA the benefits of training programmes can be considered in three categories:

- Increased revenue;
- Decreased or avoided expenses; and
- Intangible benefits.

Increased revenue benefits include increased output. Decreased or avoided expenses include improved quality measured by reduction of absenteeism, inaccuracy, accidents and wasted time or materials.

Intangible benefits are those benefits that are of value but are very difficult to quantify such as employee flexibility and improved morale.

There is ample evidence that training in the workplace also contributes to the well-being of the community at large. For instance, a general benefit accrues to the community from a better-educated workforce in the form of:

- Greater Social Cohesion;
- Enhanced environmental awareness;
- Improved health; and
- Improved quality of life for individuals.

A summary of the benefits and costs for the various stakeholders in the economy is provided in Table 5.

Table 5. Benefits and Costs of a Training Program

	Individual	Business	Others	Total Society
Benefits				
1. Increase in after-tax remuneration	✓			✓
2. Future increase in income tax			✓	✓
3. Increase in net profits after tax:				
Increased revenue		✓		✓
Decrease or avoided expenses		✓		✓
Intangible benefits		✓		✓
4. Future increase in company tax			✓	✓
5. Benefits to community:				
Greater social cohesion			✓	✓
Enhanced environmental awareness			✓	✓
Improved health			✓	✓
Improved quality of life			✓	✓
Costs				
6. Direct costs		✓		✓
7. Indirect costs		✓		✓
8. Development costs		✓		✓
9. Overhead costs		✓		✓
10. Compensation for participants		✓		✓

According to Billet (1998), studies that have addressed the question of a direct cost-benefit analysis overwhelmingly concur that accounting for all the variables, which influence return on investment, is either impractical or impossible. Thus, only those benefits that can be easily identified and quantified should be included in a CBA.

According to Robinson and Robinson (1989) the determination of training benefits is very difficult, because the methods for computing benefits vary greatly from one situation to another. For a sales training program, one may calculate the change in sales volume, the size of an average sale, or the number of new accounts; but for a management-development program, those indicators would be meaningless. In that case, one might need to determine the benefits by calculating the change in productivity, the decrease in production costs, or the increase in output. For a customer-relations workshop, the primary benefit may be a reduction in the number of customer complaints, or the amount of repeat business obtained.

Obviously, each type of training (and even each specific course) will dictate what operational benefits one may be monitoring. Thus part of the front-end work of determining operational

benefits from training is to identify the specific operational indicators that are both related to the training effort and possible to monitor.

When benefits can be computed in terms of Rand, one has to go through the process of adding up the derived benefits, including the increase in sales, the decrease in production costs, and so on. That Rand amount is then divided by the total Rand cost of the program. The result is the cost-benefit ratio for the course.

For example, if the total benefits of a program were R50,000 and the total costs were R20,000, then the cost/benefit ratio would be 2:5. Some analysts might prefer to say that the total return of the program was R50 000, while the investment was R20,000, so the return on investment was 2:5. However, the formula is expressed, the company would have received R2.50 for every Rand spent on the training program.

The total benefits of a SETA training programme can be determined by the random selection of a sample of training courses of a SETA and then raising the results calculated for these courses to the total program or universum. The introduction of these calculated benefits in a CBA, can be explained as follows:

For any individual (i) in a given year (t), the benefits of having training in a particular SETA course (j) are measured by subtracting, from earnings (y_{tij}), what he or she would have earned without having undergone training ($y_{ti()}$). The present value of these yearly benefits, for any individual (i), is:

$$B_{ij} = \sum^{N} (y_{tij} - y_{ti()})/(1 + r)^t,$$

Where N is the productive life of the individual and r is the discount rate.

3.3.3 Econometric Evaluation of Training Programs

Until now the discussion on the benefits of a training program have concentrated on the direct measurement of program benefit. The benefits of training programs can, however, also be obtained by using econometric evaluation techniques.

The most common of these techniques is multiple regression analysis. Multiple regression analysis indicates that there is more than one variable that affects the outcome of an equation.

Regression analysis can be used to determine the increase in income of a trainee, as follows (Gramlich, (1981):

$$Y_i = a_0 + a_1X_i + a_2Z_i^1 + a_3Z_i^2 + \ldots a_3Z^n_c$$

where i refers to the ith subject; Y_i the outcome variable, say discounted earnings of the subject over some period after the program; X_i a variable indicating whether the individual was in the program or not; and each Z_i variable (Z_i^1, Z_i^2, etc.) refers to a quantifiable controlling variable such as the individual's age, race, sex, and family background information. The parameter a_0 is the intercept of the regression or expected value of Y_i when all other independent variables are zero, and the other "a" parameters are the regression coefficients, or partial derivatives, for the other independent variables.

The easiest way to interpret X_i is as a binary variable that takes on a value of zero if the individual is not in the treatment group and 1 if the individual is in the treatment group. Its coefficient then measures the partial derivative of Y with respect to X, so if we change X by 1 unit by putting somebody in the program, the coefficient a_1 will measure the gain in discounted income as a result of the training program.

In this calculation the additional discounted income that the trainee received, is linked to the increase in productivity of the trainee in the workplace. This amount can be regarded as the minimum advantage that the employer will receive from the training program. The total advantage to the employer will however be a factor higher than the discounted income of the trainee. This will allow for the profit margin on the employer's cost structure.

Econometric evaluation techniques of training programs such as multiple regression analysis may, however, give misleading results. In a pioneering article, La Londe (1986) found that the econometric estimates often differ significantly from experimental results based on longitudinal data. Moreover, even when the econometric estimates pass conventional specification tests, they still fail to replicate the experimentally determined results.

The study by La Londe (1986) yields several other findings that may help researchers evaluate other employment and training programs. First, the non-experimental procedures produce estimates that are usually positive and larger than the experimental results for the female participants, and are negative and smaller than the experimental estimates for the male participants. Second, these econometric procedures are more likely to replicate the experimental results in the case of female rather than male participants. Third, longitudinal data reduces the potential for specification errors relative to the cross-sectional data.

Notwithstanding the problems experienced with cross-sectional analysis and other econometric techniques to measure the benefits of a training program, it is still important that a CBA should still be performed to analyse the financial and econometric net benefits of the SETA Programme.

It may not give a precise answer on the results of such a program but it will provide enough evidence about whether to proceed or discontinue with the program or portions of the program.

4. Macroeconomic and Distributional Analysis

4.1 INTRODUCTION

As indicated in the previous section, cost-benefit analysis can be regarded as relatively narrow-based. In other words, its impact on the benefit streams, for example; only take into account its direct sphere of influence. In the case of a training programme, it will normally only involve the business enterprise where the program is being implemented (including, of course the workers/trainees). The only other beneficiaries that can be brought into the equation are the government for receiving additional taxes and levies, and shareholders, for receiving more dividends.

Projects or programs such as the NSDS, however, have effects on the incomes of households, firms and government, not only directly through the additional value added produced by the projects or programs, themselves, but also by inducing additional output through inter-industry linkages and expenditures out of the extra incomes accruing to its direct beneficiaries. This is sometimes called the "multiplier" or "downstream" effects of a project. These multiplier effects of the project have been recognised in the literature on social cost-benefit analysis (Blitzer, Little and Squire: 1978)

More recent literature on CBA has been concerned with the question of how to deal effectively with these multiplier effects of projects, and with the derivation of indirect impact coefficients which capture all such effects in full. If these indirect impact coefficients are correctly calculated, so it is asserted, then adjusting a project's direct inputs and outputs with these coefficients will give an appropriate measure of its social profitability.

In recent years it was found to be more practicable and realistic to use certain macroeconomic analytical tools to assess "ripple" (secondary and tertiary) effects on the economy of the region or nation (Bell and Devarajan; 1979). These tools, known as "general equilibrium" models, attempt to capture the interactions of a project's direct and indirect impacts throughout the economy.

Three analytical tools are normally used for the quantitative analysis of macroeconomic and regional impacts, namely Input-Output models, Social Accounting Matrices, and computable General Equilibrium models.

4.2 THE VARIOUS GENERAL EQUILIBRIUM MODELS

4.2.1 Input-Output Models

A modern Input-Output Table is an economic tool by which a system of national accounts is extended, classified and depicted in a tabular format. The basic structure of an Input-Output Table is based on the same framework as Leontief's (1936) original statistical Input-Output Table.

The Input-Output Table serves as the basis for a broad and rapidly developing economic practice called Input-Output analysis. Currently, different variations of the standard table are

applicable to different situations. In most instances an official authority compiles and publishes a standard Input-Output Table for a particular country. In the case of South Africa, this is done by Statistics South Africa (SSA). Researchers usually remodel the official Input-Output Table for specific purposes. Input-Output Tables can be compiled in relation to either a national or a regional economy.

The function of an Input-Output Table is twofold. Firstly, the table presents a descriptive framework of the economic structure of a country by showing the interrelationships between sectors and other important economic aggregates by means of the transactions table. It is an extension of the Macro-National Accounts level. The detailed nature of the Input-Output Table is determined by the availability of data, government disclosure regulations and available research funds rather than by a rigid set of rules.

Secondly an Input-Output table serves as an economic model. Van den Bogaerde (1972) pointed out that an economic model involved the exposition of the relationships between economic variables in the form of equations. These equations are then combined to form a complete model. An economic model can thus be defined as a set of equations that show mutual dependence or interrelationships of economic variables. As an Input-Output Table's formal exposition complies with these requirements, it can be considered as a model, which is useful for analytical purposes.

An Input-Output model as an analytical tool is pre-eminently suitable for measuring the effects of autonomous movements in the economy. Given specific assumptions with regard to the nature of the production function, the Input-Output model can be generally utilised for the above-mentioned purposes, on account of its mathematical features. The matrices which can be derived from the Input-Output model, are used as instruments for economic analysis. This is done by means of the so-called technical input coefficients' matrix and the Leontief inverse matrix. The technical coefficient matrix illustrates the direct effects while the Leontief inverse matrix shows the direct and indirect effects.

4.2.2 Social Accounting Matrices

Social Accounting Matrices (SAMs) are another tool for understanding linkages between aggregate production in an economy and its composite elements (i.e., aggregate demand, incomes). SAMs differs from Input-Output models and other general equilibrium approaches because their focus can be more tailored to examining impacts on social rather than economic entities (e.g., commodities, markets). For example, different household and consumer groups can construct SAMs with an emphasis on disaggregating national income, consumption, and wealth, allowing a better understanding of equity issues.

Viewed in broad terms, the SAMs are to a large extent an extension of the conventional Input-Output Table which has been compiled and published by SSA for a number of years. Besides the information on the interdependence of the different sectors of the economy contained in the Input-Output Table, the SAMs also contain detailed information on income and expenditure patterns of households on a regional as well as population group basis.

Similar to the Input-Output Table the SAMs can also be transformed into economic models. However, due to the fact that final demand sectors are disaggregated by income group and many other social classifications, SAMs are a more effective tool for examining distribution impacts than the Input-Output Table. (SSA has just released an updated SAM for the South African economy.)

4.2.3 Computable General Equilibrium (CGE) Models

Computable General Equilibrium (CGE) models use the same framework and data as Input-Output Tables and in some cases even SAMs. However, unlike Input-Output Tables, CGE models incorporate more realistic consumer and producer behaviour. That is, these models account for the reactions of consumers and producers to changes in economic conditions (e.g., price). These specifications make CGE models more effective for purposes of policy analysis.[3] A recent alternative to the specification approach is econometric estimation, which allows for a more sophisticated incorporation of consumer and producer behaviour in the CGE model than is normally possible through specification techniques.[4] However, econometric estimation requires a consistent set of multi-sector time-series data that are typically not available in developing countries.

4.2.4 Limitations of Macroeconomic Models

The critical limitations of macroeconomic models are as follows:

- Constructing macroeconomic types of models is time-consuming, data intensive and costly, but they are the only way to comprehensively address the secondary economic impacts of projects.
- A shortcoming of both Input-Output models and SAMs is that they provide only a "snapshot" view of the economy for the time period that data were gathered and the model constructed. Thus, these models do not typically account for changes in technology that are likely to result from changing market conditions.
- While CGE models can be useful tools for policy analysis, model development may in many instances not be feasible due to data requirements and the high costs involved. In addition to developing an appropriate Input-Output matrix, CGE models require a considerable amount of data on national accounts, trade, and other factors that must also be collected.

4.2.5 The Applicability of Macroeconomic Models to the SETA Programme

In the discussion of the three relevant macroeconomic models and CBA, it might seem as if the analyst has a choice of completely different models, each with its individual advantages and disadvantages. However, these models are not independent, but to a large extent are extensions or variations of each other. The models are in some instances also linked in that the output of one model forms the input of the other. In order to ensure that the eventual results of the analysis would present the full economic impact of the project, these models should therefore be used in a complementary manner where possible. A cost-benefit analysis is indispensable to such

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[3] For more information on the development and application of computable general equilibrium models, see Kemal Dervis, Jaime de Melo, and Sherman Robinson, (1982); and Ginsburgh, Victor and Michiel Keyser, *The Structure of Applied General Equilibrium Models*, Cambridge, MA: MIT Press, (1997).

[4] For more information on econometric estimation approaches, see Jorgenson, (1998).

macroeconomic models as it will indicate the basic financial and economic parameters and viability of the program or project.

Due to the complexity, the data intensiveness and the expertise needed to develop the macroeconomic models, it is probably not advisable that these models should be developed in the initial stage of the appraisal of the SETA Programme. It is therefore advisable that preference should be given to standard social cost-benefit analysis as an economic tool to evaluate the effectiveness of the NSDS.

5. Performance Indicators

5.1 MACROECONOMIC PERFORMANCE INDICATORS

In Section 1, an indication was provided of the causal relationship that exists in the economy between important policy/structural parameters and the ultimate outcome of economic performance levels. In the labour field it was shown that certain minimum levels of labour productivity/efficiency, expressed in terms of, for instance, the ratio of highly skilled labour/total employment; and ratio of cost of labour/cost of capital, are required to attain certain minimum levels of employment and income growth.

A macroeconometric model consists of a range of statically estimated equations and coefficients, depicting the relationships between a multitude of dependent (exogenous) and independent (endogenous) economic variables, simulating the actual developments in practice. Based on these clearly quantified relationships, it is possible to single out the impact of the variances in the levels of skills inputs on the performance levels of the production processes. Education and training can be regarded as an exogenous input into the economic production and distribution processes, and it is therefore possible to model such relationships using econometric methods.

In practice, over a period of time, the impact of the NSDS should be measurable in some macro and sectoral economic variables. These indicators which will be referred to as performance indicators can be monitored over time to measure the progress of the NSDS. A target could also be set, that will serve as a yardstick for these performance indicators on a national and/or sectoral levels, to determine to what extent, certain objectives are being met.

Taking into account specifically the availability of data, it is foreseen that in the initial stage the following macroeconomic performance indicators could be used to track the impact of the NSDS:

1. Increases in Productivity.
2. Increases in Production
3. Increases in Employment levels.

At a later stage a “competitiveness” performance indicator could probably be created, where the changes in various elements of the cost structure of the various sectors are monitored and compared with the general economy and possibly to overseas competitors. Logically, the role played by any skills enhancement programme should be singled out.

Most of the data required for the initial performance indicators are available from SSA on a sectoral basis and are published annually.

Increase in Productivity:

By making use of the Quarterly Bulletin of the South African Reserve Bank productivity indexes can be worked out for labour as well as capital for the national economy as well as for the main

sectors of the economy. The National Productivity Institute (NPI) also estimates a multi productivity index from time to time.

Increase in Production and Employment

It is well known that labour productivity, unit labour costs, overall competitiveness, and the ratio of capital costs/to labour costs, all ultimately impact on the economy's potential to grow and create employment.

The SSA publishes on a regular basis (quarterly and monthly), production and employment indices for various sectors.

5.2 INSTITUTIONAL EFFICIENCY / EFFECTIVENESS INDICATORS

In the previous section, proposals were made on how to monitor the impact of a skills development programme on the broader economic and social objectives of such a policy initiative. It was also suggested that to improve the effectiveness of such a monitoring exercise, it is preferable to move down to sectoral or even micro (enterprise) levels.

In an international context, there are obviously numerous methods applied to monitor the effectiveness and efficiency of sectorally driven workplace training schemes. A few examples will illustrate the essence of such monitoring systems. Obviously, every country has its own unique circumstances, and consequently, a suitable framework would have to be created for the South African situation.

The monitoring system can be divided into two broad categories viz: horizontal and vertical.

a) Horizontal

A monitoring system on a horizontal basis is important to effect inter-sectoral comparison on a standardised basis. For example for each of the 25 SETAs, the following elements of the training effort can be monitored.

- Targeting Small enterprises
- Targeting export orientated firms.
- The range of occupations that are benefiting from the scheme, for example:
  - — Administrative
  - — Executive and Professional
  - — Supervisory
  - — Skilled workers
  - — Semi-skilled workers
  - — Unskilled workers
- Percentage of firms eligible for training assistance not participating.
- Age distribution of workers actually benefiting from the
- Scheme.
- Income distribution of workers participating/benefiting from the training assistance.

b) Vertical

Under the definition "Vertical" the following aspects of the workplace training programme can be monitored.

SETA Level

The effectiveness/efficiency of each SETA can be continuously monitored on the basis of the following performance criteria: [These are only examples, and could be extended depending on the purpose of the performance criteria].

1. Technical Indicators

- Total number of trainees
- Number of trainees per course
- Number of trainees per province

2. Effectiveness of Seta

- Success rate in total
- Success rate per course
- Success rate per province
- Number of repeaters per course per annum
- Number of trainers per course
- Number of courses per SETA

3. Financial Indicators

- Overhead and operating cost
  - — Per trainee
  - — Per course
  - — Per trainer
  - — Per staff member of SETA
- Turnover per SETA (Revenue)

4. Membership

- Number of members
- Size of members
  - — Per turnover
  - — Per number of staff
- Nature of membership
  - — Per province
  - — Per economic sector

5. Profile Of Trainees

- Age
- Sex
- Formal training
  - — School
    - Grade 6
    - Grade 8
    - Grade 10
    - Grade 12 (matric –m)
  - — Technical m + 2
    - m + 3

- m + 4
- m + 5
- m + 6

— University Education
- m + 3
- m + 4
- m + 5
- m + 6

— Physically Disabled

Enterprise Level

It is essential that the efficiency and effectiveness of specific training programmes are evaluated and monitored on a continuous basis. In broad terms this would involve determining the cost-benefit of a particular training programme in a particular firm. This performance monitoring is often referred to as "operational tracking". It is important to note, however, that it is sometimes necessary to go beyond a pure cost-benefit (return on investment exercise, and look at other, more "intangible" benefits. Examples are:

- Have customer complaints declined after training"
- To what extent has wastage been reduced?
- Has worker morale increased?

An important aspect of operational tracking programmes, is the meticulous preparation for the procedures. The key is to articulate a clear purpose for the tracking effort. The Human Resource Development professional and the client must identify objectives in specific terms. It is also crucial that the HRD professional and the client establish beforehand a clear link between; on the one hand the lack of certain skills in the organisation, and the performance levels, on the other.

6. Summary/Conclusion

This document provides the results of a research study which initially required an investigation into the use of social cost-benefit analysis (CBA) as a method to gauge the effectiveness/ efficiency of the skills development programme of Department of Labour (DoL). The ultimate outcome of the study provides not only a CBA-methodology tailored for this human investment initiative, but also includes macro and distributional analysis plus performance indicators that can be used to monitor the performance of the programme to inform policy implementation.

6.1 MAIN FINDINGS

International and local experience have proven that although CBA is an appropriate method to evaluate the efficiency of a training programme, it is narrowly based. The policy maker may require knowledge of the broader social/economic impacts of training programmes. Hence, it was established that CBA as well as other quantitative economic methodologies should be investigated to provide the client with a "package" of methodologies, which range from a narrowly based CBA to a wider economic and distributional analysis. The scope of this report thus concentrated on three different ways to establish the economic "net worth" of a training programme; from its narrowest to its broadest dimension possible.

6.1.1 Social Cost-Benefit Analysis (CBA)

The pros and cons of applying CBA techniques in the context of the National Skills Training Programme are extensively debated in this report. The main conclusion, also based on international experience, is that at the enterprise level, a CBA of training programmes does produce acceptable results. It is, however, much more difficult to quantify all the benefits flowing from a training programme, compared to its costs.

Notwithstanding the problems experienced with CBA, it is still imperative that it be performed as a first step in the evaluation and monitoring process. It is also shown in section 3.3.3 that use can be made of regression analysis to supplement standard methods of calculating direct programme benefits in the context of CBA.

6.1.2 Macro-Economic and Distributional Analysis

It was indicated in the report that CBA (par. 3.1.3) as an analytical tool, has a few drawbacks that need some attention. These are:

- It is a narrow -based tool
- It does not handle the distributional issue very well.

These "deficiencies" in CBA can be reasonably supplemented by using three well-known macro-economic tools viz.:

- Input-output models (I/o's).
- Social accounting matrices (sams) and
- Computable General Equilibrium Models (CGEM's)

It was mentioned in the report that these models are to a large extent extensions or variations of one another. Further, it is important to remember that these models are complicated in nature, are heavily data intensive and time consuming to construct and to operate.

In view of these findings, it is not recommended to start off with these macro-econometric methodologies to evaluate the economic contribution of the workplace-based training programme. It is advisable to begin with the traditional narrow-based CBA–approach to measure the net financial and economic contribution of the training programmes.

6.1.3 Performance Indicators (par. 5)

Econometric models are used to simulate actual developments in the economy. This is possible due to the interrelated and inter-dependent nature that the economy displays as well as its tendency to restore equilibrium once disequilibrium occurs in one part of its holistic system. This is exactly how things work in reality in the economy. Based on this truism, it is possible to glean from the multitude of interdependent equations of a macro model, specific ones that would reflect the contribution made by the investment in workplace skills training programmes.

Examples given in the report (par. 5.1) are the possible impact of workplace training programmes on the productivity, production and employment of the economy in total or of specific sectors (SETA-levels). It is also indicated that these equations require relatively less data and time to construct, compared to for example, a Computable General Equilibrium Model (CGEM).

6.1.3.1. Monitoring Institutional efficiency

The last part of the report deals with the setting up of system framework to monitor the efficiency/effectiveness of SETA Programmes on an ongoing basis. This is represented at two levels, viz., horizontal and vertical.

Horizontal (par. 5.2(.a))

On the horizontal side, proposals are made on how to identify key variables that should be monitored. Examples are: the percentage of small firms being targeted; the range of occupations that benefit most; the effect on the income distribution of workers participating, etc. Information on these issues is readily available and should be built into application forms up-front.

Vertical (par. 5.2(b))

On the vertical side, it is important that each SETA puts in place appropriate norms and criteria against which to monitor its own "management efficiency". In this report a wide range of possible criteria are given that should provide a clear overview of the extent to which a particular SETA utilises its scarce resources (money and personnel). It should also not represent too large a problem to set up the necessary databases and computerised analytical capabilities.

6.1.4. Conclusion/Recommendations

The main conclusion reached in this report is that it is necessary and practical to set up a CBA system to monitor and evaluate the NSDS of the DoL at national, sectoral and work place levels.

The CBA system should, however, be supplemented by the setting up of a range of performance indicators suited to national and sectoral (SETA) levels.

Even though the CBA exercise is narrowly based and probably also better equipped at enterprise/programme level, it is recommended that, initially, consideration not be given to the setting up and running of macro and distributional models to cater for the wider more indirect effects of a training programme.

6.2 IMPLEMENTATION OF MONITORING SYSTEMS

It is important to conduct a CBA as soon as a specific SETA is fully operational. Initially, CBA-analysis should only be conducted at a micro-training level. All aspects of individual courses should be audited. However, a CBA should form the focus of the audit in order to ascertain its net value in monetary terms. In the micro-analysis, the benefits of a course will be measured in a practical way. For example, the effectiveness of a sales training program will be measured by calculating the change in sales volume, the size of an average sale or the number of new accounts opened.

To obtain a sense of the feasibility of a SETA in its totality, a random sample of different courses could be analysed where the average of the results could serve as an indication of the effectiveness of such a SETA.

Secondly, when a SETA has reached an advanced stage, more advanced econometric techniques such as multiple regression analysis could be used to determine the increase in income of the workers that have taken part in the training program relative to those workers that have not attended the program.

Parallel to the implementation of CBA, it is important that SETAs institute performance indicators. To implement meaningful macro- and sectoral performance indicators, the SETAs would have had to be in operation for a period of time. However, immediate steps could be implemented to monitor the effectiveness of the various SETAs. It will be important to set up a system for each SETA to capture primary information through its normal administrative process.

It is foreseen that DoL or the individual SETAs will have to use external expertise to conduct cost-benefit analyses of the SETAs. Expert assistance will also be needed to set up initial management information systems to monitor the effectiveness of the SETA as a normal business unit. However, it will probably be in the SETAs' interest to obtain in-house capabilities in the long run to operate the management systems. For this purpose, it will be important to ensure that the necessary computer infrastructure be installed to operate these management information systems effectively.

Annex. CBA Methodology

NATURE OF CBA

Overview

The term "cost-benefit analysis" (CBA) refers to the systematic comparison of the relative economic advantages and disadvantages of a project. In CBA, the basic criterion for the acceptability of a project is the present value of its net benefits – the benefits and costs being defined in incremental terms as compared to the situation without the project. CBA therefore collapses a large and intricate account of a project into a single number for decision-making purposes. This number is usually the so-called net present value (NPV) which expresses the net stream of benefits and costs at their current value. The basic rules in CBA are that the NPV should not be negative and that it must be higher than, or at least as high, as the NPV of mutually exclusive project alternatives.

CBA focuses on the economic contribution of a project for a defined community or interest group. It is wider in its application than an analysis of a project's financial feasibility (in other words, CBA is concerned with more than the investor's welfare), but typically excludes macroeconomic analysis (where the principles of CBA may break down due to the inherent difficulty of quantifying macro effects). CBA is therefore typically used as a project evaluation tool by public decision-makers, wishing to optimise limited budgets in promoting the welfare of a specific area or sector.

Discounting present and future consumption

If all costs and benefits arose in the instant that the chosen option was started, there would be no difficulty in combining the values identified by analysis, as the positive and negative values will simply be added together.

However, costs that are immediately incurred and benefits that are gained in the present are judged differently by the community from costs and benefits that materialise over a period of time. The community would prefer to receive a benefit today rather than in the future, while deferred costs are more attractive than immediate payment. Therefore the money value of costs and benefits over time cannot simply be added together and the time preference of the community has to be taken into account through the use of a weighting process. This weighting by the community is done with the aid of a rate that reflects the value of a benefit or cost over time. It is known as the *social discount rate*.

Suppose b_0, b_1, …, b_n are the project benefits in years 0,1,2 …, n and c_0, c_1, …, c_n are the costs in years 0, 1, 2…, n, respectively, and i is the social discount rate. The present value of the benefits is then given by

$$b_0/(1 + i)^0 + b_1/(1 + i)^1 + \ldots + b_n/(1 + i)^n$$

and the present value of the costs are given by

$$c_0/(1 + i)^0 + c_1/(1 + i)^1 + \ldots + c_n/(1 + i)^n$$

Division of consumption between contemporaries

A further important objective of economic policy is that of equity. In this case it is necessary for the planner to assign weights to the value that consumption holds for different individuals, normally grouped into certain income-groups and/or regions. The weights can be derived from the principles underlying the policy and do not necessarily have to be quantified. For example, progressive taxation systems reflect the greater weight that the planner assigns to the lower-income groups relative to the higher-income groups.

Project choice can serve as an instrument of income distribution in that both the geographical situation and the labour-intensity of the project are related to the redistribution possibilities of the project. In studying the distributive aspects of a project, the first problem is to determine the net benefit of a project by geographical region. Thereafter weights are assigned to the consumption that is generated in different regions, with the aim of valuing the consumption generated in poorer areas higher than that in more affluent areas. Project choice also has an influence on income-distribution in that projects that depend heavily on labour (relative to capital), promote the redistribution of income over the short run.

Financial, Economic and Social CBA

A comprehensive cost-benefit analysis should include the following:

- The financial assessment, to determine a project's need for funds and also whether the project is viable from a financial point of view;
- The economic analysis, to determine the scarcity value of goods and services used in the project and that arise from the project - this is mainly based on opportunity-cost considerations; and
- The social analysis, which is an investigation into the effect of the project on the distribution of welfare and other social circumstances.
- To understand the need for an economic and social CBA instead of only a financial analysis of a project, it is important to differentiate between the role of both the private and public sectors in the economy.

The private enterprise is concerned only with the interest of its owners or shareholders when profits are being calculated, while the interest of the community at large is the focus of the public sector. The result is that a much wider spectrum of costs and benefits has to be considered by the public sector than in the case of the private sector where pure profit determination is at stake.

a) The financial analysis

The term "financial analysis" can, depending on the context in which it is used, refer to one or more accounting techniques, e.g. cash-flow analysis, profit determination, or the analysis of the source and application of funds. "Financial analysis" as used in this document refers to a cash-

flow analysis from which present and future expenditure and income are calculated to determine the financial feasibility of a project. The calculations are done at current prices. In the case of public projects such an analysis normally gives an indication of the pressure the project will place on the exchequer and the degree of subsidisation it will require.

b) The economic analysis

By economic analysis is meant that the project is re-evaluated at prices which reflect the relative scarcity of inputs and outputs. The economic analysis normally follows the analysis of the source and application of funds, which is done at market prices. In the economic analysis prices actually represent opportunity costs and reflect the actual economic value of inputs and outputs. The opportunity cost is the value of the best alternative application of an input or an output of the project. The market price of land, for example, does not necessarily reflect the opportunity cost of the land. Thus, when a price has to be determined, for example, for a piece of agricultural land used for maize farming but on which an airport is planned, the opportunity cost of the land is the discounted net output from the maize. The economic analysis is done in real prices.

c) The social analysis

With the help of this analysis the consequences of a project for the distribution of welfare in the community can be analysed and an evaluation can also be made of the effects of other social factors such as security, equity and the aesthetic values of the community. This analysis is best performed if government gives an indication of the relative value that is attached to different groups and social factors in the economy. The analysis is done by attaching certain weights to the costs and benefits of all the stakeholders involved (directly or indirectly) in the program.

Value Determination in CBA

Since resources are limited, an important consideration in their application is to find optimal combinations of resources through which the net community benefit can be maximised. The value of inputs and outputs depends to a large degree on the level of sophistication of the economy in which prices are determined. Market prices of products and services often do not reflect the actual value (scarcity value) of products and services, since governments interfere in the operation of product and service markets through, for example, tariff protection, taxes or subsidies. To assess the economic effectiveness of the application of resources within projects, it is essential that the prices of inputs and outputs indicate their scarcity (economic value).

Scarce resources are traded at specific prices, namely market prices. Provided certain conditions are met, prices are the best criterion upon which the allocation of resources for specific uses can be based. The assumption is that markets are perfectly competitive and that supply and demand determine the prices of inputs and outputs. When the free operation of the markets is interfered with, for example by the restriction or stimulation of either supply or demand or by price interference, market prices do not reflect economic scarcity values and the use of shadow prices becomes necessary.

An economy is distorted if market prices and shadow prices do not coincide. John D. MacArthur, in Colin, Kirkpatrick and Weiss (1996) identifies seven factors which are sources of distortion of the market prices and which should be rectified:

- Indirect or income taxes.
- Uncorrected externalities
- Quantity controls
- Controlled prices
- Tariffs and trade control
- Oligopoly
- Imperfect information, transaction costs and missing markets.

Market prices

Market prices are those perceived prices at which products and services trade, irrespective of interference in the market, e.g. the market wages of labour, the price of 2 kg of maize meal, the price of 1 kilowatt-hour of electricity, the fee for 1 study course, etc.

Shadow prices

Shadow prices are the opportunity costs of products and services when the market price, for whatever reason, does not reflect these costs. Examples are shadow wages of labour, where the fact that minimum wages are fixed is taken into account, a shadow price for fuel, where taxes and subsidies are excluded, the marginal cost of generating 1 kilowatt-hour of electricity, etc.

Principles in the calculation of Shadow Prices

There are a number of important approaches relating to the way in which shadow prices ought to be calculated. The first can broadly be called the world price approach (Little and Mirrilees, 1969) and the second the opportunity cost approach (UNIDO and World Bank)[5]. A third important approach rests on the willingness of the community or groups in the community to pay for goods or services. The first two approaches form the basis of shadow price calculation while the willingness-to-pay approach is recommended only as a method of calculating surrogate prices under certain circumstances, e.g. in the valuation of externalities. No detail discussion is therefore devoted to this principle.

World price approach

The world price approach takes into account world prices of products and services, especially with regard to those goods that are freely traded on international markets. Important examples are mineral and agricultural products for which active free international markets exist. Where local market prices are distorted the world price serves as a shadow price after adjustments have been made for costs in the import and export of goods. This approach is not always reliable, however, because governments often peg currencies at artificial levels that do not reflect their scarcity value. Adjustments are then required in the value of the currencies. However, not all inputs and outputs can necessarily be converted to currency value. For example, labour is one of the most important inputs in less developed countries, but there is no free international market making it possible to attach a currency value to surplus labour.

5) UNIDO; Manual for evaluation of Industrial Projects; New York: UNIDO.

Opportunity Cost Approach

The opportunity cost approach uses as the shadow price of inputs the production that is given up elsewhere by withdrawing these inputs from alternative use. On the other hand for the shadow price of outputs the additional incremental benefit achieved by undertaking the project relative to the situation had the project not been undertaken is used. In this way an attempt is made to accentuate internal considerations in order to find a reliable measure of the acceptability to the community of projects.

Since international trade considerations, e.g. exchange savings, are also important in project assessment, internal prices will not reflect all the community advantages and disadvantages. Therefore it was decided to combine the two approaches, the world price approach and the opportunity cost approach, in order to calculate shadow prices for project assessment more accurately. The approach is that where projects substitute imports or promote exports the world price approach is adopted. Locally purchased inputs are valued at international prices where the possibility exists that they could be imported or exported. The inputs for which no international prices exist are valued at local opportunity costs. This approach largely eliminates the individual disadvantages of each of the world price and opportunity cost approaches.

Key Shadow Prices for South Africa

The following key shadow price factors are generally used for South Africa:

a) Petrol and Diesel Fuel

The shadow prices of petrol and diesel are their pump prices minus levies and taxes that do not directly benefit the fuel consumers.

An example of the shadow price factor for petrol and diesel are as follows: (1999 Cents)

	Petrol (93) Cents
Pump price	268,0
Less: Total taxes (included):	94,6
Fuel taxes	90,6
Customs and excise	4,0
Plus: Taxes as user charges:	
Exp. on roads	22,0
Shadow price	195,4
Shadow factor	0.729

b) Imported Machinery and Equipment

The source for a relevant import tariffs is the Jacobson's Harmonized Trade Tariff Book.

Since 1994 the liberalisation of the South African trade tariffs has caused a large number of these items to be imported free of duty. However, for some items, tariffs between 10 and 20 % still apply.

It is recommended that an average of 10 % on all relevant imported items is used. However, as not all machinery and equipment will have to be imported (± 50 % is imported) it is recommended that a shadow price factor of 0.95 is applied.

The formula is as follows:

$$(1 - (0{,}5 \times 0{,}1)) = 0.95$$

c) Electricity

Electricity tariffs are based in part on historical costs, and hence do not necessarily reflect fully the opportunity cost that will be entailed in providing electricity to water augmentation schemes. Consequently it is necessary to calculate a shadow price.

Electricity tariffs are comprised of generation transmission and distribution costs. Currently there is an oversupply of capacity in terms of generation. However, over time, user demand is expected to increase, and new generating plants will have to be constructed. This will cause a considerable increase in the current generating cost.

Taking into account the current market price of Eskom electricity, a shadow price 1,094 is to be used.

d) Unskilled Labour

Labour differs in many respects from other production factors. In South Africa, for example, it is possible that there can simultaneously be a shortage of skilled labour and a surplus of unskilled labour. At the same time factors exist in the labour market which result in the labour wage not reflecting relative scarcity.

The employment of unskilled labour will entail little or no opportunity cost specifically where the unemployment rate is very high. The classic position has been that this labour should have a shadow wage of zero (Sassone and Schaffer, 1978:69) or close to zero (Dasgupta and Pearce, 1972:105). UNIDO[6], 1978: 38-39 suggests, however, that a positive shadow wage is likely to be more appropriate because:

- A worker's caloric intake needs to be higher than that of an unemployed person;
- Some minimum "reservation wage" must be paid to induce someone to work at all; and
- The market wage paid will induce increased consumption, reducing the resources available to other consumers.

It is further suggested that "if better information is lacking, the shadow wage of unskilled labour may be taken as roughly the equivalent of three kilograms of grain per day" – this figure being "often quoted as a world-wide average".

The equivalent price in rand, which has been calculated as

> 3 kilograms of maize meal at R1,43/kg = R4,30/day = R30,10/week = R1 565,00 per annum.

6) UNIDO. 1978. Guide to practical project appraisal: social benefit-cost analysis in developing countries. Written by Hansen JR. New York: United Nations.

By using the statutory minimum wage for unskilled labour, the shadow price for unskilled labour for 1998 at an hourly rate of R5,16 is R12 074 per annum.

Shadow price factors:

$$\frac{1565}{12074} = 0.129$$

e) Foreign Exchange Rate

Although CBA is normally undertaken at constant prices, it is necessary that relative price changes (specifically with regard to international trade) be taken into account. The fluctuation in the foreign exchange rate is normally a factor of the difference between the domestic inflation rate and the inflation rates of South Africa's most important trading partners. If the fluctuation in the exchange rate differs from this, it implies that relative prices have changed. This means that prices of imports and exports are to be adjusted.

The exchange rate does not reflect the true change in import and export prices. After analysis of historic data, it is foreseen that a weakening of 1,5 % p.a. in addition to the effect of what is referred to as the purchasing power parity theory can be expected. Calculated over a period over 20 years, foreign trade prices of South Africa should be adjusted with a shadow price factor of 1.17.

Valuation Issues

a) Externalities

Externalities are the effect of a project on the environment, ecology or general standard of living of a community that are not reflected by the prices of inputs or outputs. If, for example, a manufacturing plant emits smoke that pollutes a town and causes its citizens to get lung cancer, there is a social cost to the operations of the firm that will not be felt by the firm and will not influence its price or quantity supplied. On the other side, if a firm were to sell a product that benefits uninvolved outsiders, such as emission-free engines, the firm would not capture all of the benefits of its production in its selling price.

Externalities are difficult to include in project assessment because they are not directly allocable to the project and furthermore are hard to quantify. The requirement that prices of products and services should reflect their relative scarcity value on the basis of all costs and benefits continues to apply, however, and therefore externalities should be considered in the analysis of a project. Thus, for example, the opportunity cost of polluted air can be approached by using the degree to which government is prepared to bear the cost of eliminating air pollution as a measure of the community's willingness to pay for clean air. Where it is suspected that a project will produce some form of externality, this aspect should be carefully investigated.

b) Inflation

The object of a cost-benefit analysis is to measure community advantages and disadvantages after the relative scarcity value of project inputs and outputs have been taken into account. However, inflation, the continued rise in general price levels, makes the determination of relative scarcity

values more difficult. Inflation is not taken into account in the economic analysis and all evaluations are done in base year prices with allowance for relative price shifts. (The financial results of profit-orientated projects viewed in nominal terms, on the other hand, are affected by the inflation rate, and the internal yield rate will have to be at least equal to, but preferably higher than the inflation rate to ensure that the project continues in existence. Alternatively the net present value of the project must be positive when costs and benefits are discounted with the aid of the inflation rate.)

c) Indirect taxes and subsidies

Taxes and subsidies influence the optimal application of production factors and the analyst will have to take these into account indirectly when he forecasts the combination of inputs that will apply after the implementation of the project. It is not, however, simple to deal with indirect taxes and subsidies in cost-benefit analysis.

From the point of view of the economy as a whole, indirect taxes and subsidies are transfer payments, and when new inputs that have to be taxed or subsidised are looked at in the national interest, the value is calculated from the point of view of the producer by subtracting taxes and adding subsidies. When the effect of a project on a particular area is considered, however, the effect of indirect taxes and subsidies on the local economy has to be taken into account. In such a case the market prices, including the taxes and after subtracting the subsidy, indicate the social marginal value of the input or benefit. The tax saving or subsidy loss of the region should be shown as a redistribution effect from or to the overall authority respectively.

It must be kept in mind that "taxes" charged on prices should be taken into account as part of the project cost. An example is the component of the oil price used to safeguard the oil supply.

Sometimes confusion arises as a result of taxation that is levied for a specific purpose, which in reality serves as a consumer charge. The general point of departure here is that in circumstances where tax would normally be subtracted, all taxation, even taxes that serves as user charges, is subtracted from market prices to calculate the scarcity value, and that a cost-element is added for the use of the input: Where it is very difficult to impute the value, the analyst can consider keeping the tax in the price as an estimate of the user charge, for example, part of the tax on petrol would serve as a user charge for the use of roads. The analyst can consider not subtracting this tax from the price of petrol so that it can serve as an estimate of the damage to existing roads that result from a project.

All direct taxation (e.g. income tax) and indirect taxation is included in the financial analysis, but direct taxation is not taken into account in the economic analysis and indirect tax is dealt with as set out above.

d) Project Life

The project life is equal to the expected economic life of the project, which means that the analysis period will vary from project to project. Any assets that may remain at the end of the economic life of the project should appear as a residual item either as a benefit or a cost, depending on whether they are removal costs or externalities.

CRITERIA FOR PROJECT ASSESSMENT

The Choice of a Social Discount Rate

It has been explained previously that to compare costs and benefits of a project that do not materialise at the same time they should be first made comparable. This is done by discounting the cost and benefit streams to a specific point in time, by using a social discount rate.

The determination of a suitable social discount rate for a country, has caused many theoretical debates in the past. The points of departure in the literature can be divided broadly into three schools, namely those who argue that the discount rate should be equal to the marginal return on capital (opportunity costs of capital), those whose argument rests on long-term real interest rates (cost of funding to the state), and those who advocate a social time preference rate.

Aspects of importance in deciding on a suitable rediscount rate are the following:

- The discount rate should not be influenced by business cycle conditions and policy, since the preferences that find expression in this rate are aimed at the extension of the long-term welfare structure.
- A low discount rate generally favours projects with a high initial capital cost and low current costs, while the opposite applies to high discount rates. Since labour costs are part of current expenditure, a high discount rate favours the employment of labour.
- If the real social discount rate is lower than the real implicit discount rate in the private sector, then investment by the public sector will be encouraged at the expense of investment by the private sector. The larger the gap between the two, the stronger the effect.

Without entering the debate on what theoretical base a social discount rate for South Africa should be chosen or the absolute level of this rate, it should be noted that most of the major development agencies such as the World Bank use a 10 percent real discount rate. In the past an 8 percent discount rate was used for public sector capital projects in South Africa.

In the light of the objectives of employment creation and the expansion of the private sector, it is probably more correct that a real social discount rate of 10 percent per annum be adopted for public investment projects in South Africa.

Net Present Value Method

According to this method the difference between the benefits and costs (the net benefit) in the specified year is discounted to the present by using the social discount rate. The discounted use of all these net benefits over the economic project life is defined as the net present value (NPV). In terms of the terminology set out above.

$$NPV = \Sigma b_j/(1 + 1)j - \Sigma c_j/(1 + i)^j.$$

The criterion for the acceptance of a project is that the net present value must be positive; in other words, funds will be voted for a project only if the analysis produces a positive net present value.

The Internal Rate of Return

The internal rate of return (IRR) is the discount rate at which the present values of cost and benefits are equal. It is therefore the value of the discount rate r, which satisfies the following equation:

$$\Sigma b_j/(1 + r)^j - \Sigma c_j/(1 + r)^j = 0.$$

Only projects with an internal rate of return higher than the social discount rate, which forms a lower limit, will be considered for funding. The internal rate to return must be handled carefully, because there are situations in which the mathematical solution of the above equation is not unique. This happens when the stream of net benefits over the assessment period changes sign more than once.

The Discounted Benefit-Cost Ratio

The discounted benefit-cost ratio (BCR) is the ratio for the present value of the benefits relative to the present value of the costs, i.e.

$$BCR = \{\Sigma b_j/(1 + i)^j\} / \{\Sigma c_j/(1 + i)^j\}$$

In practice it is probably more common to compute the benefit-cost ratio using the present worth of the net benefit with the present worth of capital costs.

A project will be considered for funding only if the benefit-cost ratio is greater than 1.

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Appendix 1A. Contacts For International Review of Skills Development

Country	Organization	Contact	Comments / Status
Australia	Australia National Training Authority (ANTA)	Dr. Kaye Bowman Bowmank@anta.govt.au	5/2: Lindsay Falkov contacted Dr. Bowman for information. 6/8: Mr. Peter May responded on behalf of Dr. Bowman. He sent a description of the VET system, and a literature review relating to the Training Guarantee.
	Australia National Training Authority (ANTA)	Simon Wallace WallaceS@anta.govt.au	Referred Edward Brooke to Kaye Bowman.
	National Centre for Vocational Education Research (NCVER)	(61-8) 8333-8400 (tel.) (61-8) 8331-9211 (fax)	5/1: Edward Brooke ordered 2 books, Quality assurance in VET: Review of research, and Dimensions and effectiveness: Towards performance indicators. They are being sent to Brooklyn Lodge, and will be held for someone to pick up
	Vocational and Education Training Authority	train@cit.act.edu.au	5/5: Lindsay Falkov asked staff for more information about the experience of VETA's monitoring and evaluation system (successes and failures). Asked for reasons why the training guarantee system in Australia failed. No response ever received. 5/14: Lindsay Falkov followed up with another e-mail asking specific questions in relation to strategic planning, performance indicators, monitoring systems, evaluation, performance/management contracts and MIS.
	Office of Post Compulsory Education, Training and Employment (PETE)	gftphotline@edumail.vic.gov.au mccarthy.peta.j@edumail.vic.gov.au ring.peter.p@edumail.vic.gov.au	5/5: Lindsay Falkov asked staff for information on PETE. No response ever received. 5/14: Lindsay Falkov followed up with another e-mail asking specific questions in relation to strategic planning, performance indicators, monitoring systems, evaluation, performance/management contracts and MIS. Lindsay Falkov asked for information on PETE. No response ever received. Lindsay Falkov asked Peter Ring for information. He responded and recommended three websites.
	Group Training	gtaqnt@squirrel.com.au	5/5: Lindsay Falkov e-mailed Mr. De Medici asking for information about the Group Training Schemes. No response was ever received. 14/5: Lindsay Falkov followed up with another e-mail asking specific questions in relation to strategic planning, performance indicators, monitoring systems, evaluation, performance/management contracts and MIS. 15/5: Mr. De Medici responded to Lindsay Falkov and provided some information on funding. He said he would put something together for Lindsay Falkov to review.
	NCVER/VOCED	kb@lwa.au.com	5/5: Lindsay Falkov asked Kath Brewer for her report "Maximising Outcomes: Monitoring and Evaluation of Workplace Based Training: by Linda Wyse and Association on behalf of NCVER-VOCED. 5/8: Ms. Brewer faxed the report to Lindsay Falkov.

Country	Organization	Contact	Comments / Status
Australia	Department of Employment, Training and Industrial Relations	web@detir.qld.gov.au	5/4: Lindsay Falkov asked staff for information on experience of implementing the skills development programme. No response ever received. 14/5: Lindsay Falkov followed up with another e-mail asking specific questions relating to strategic planning, performance indicators, monitoring systems, evaluation, performance/management contracts and MIS
	Australian Industry Group, Employment, Education and Training	gail@aigvic.airgroup.asn.au	5/4: Lindsay Falkov contacted Ms. Arnall inquiring about monitoring and evaluation systems in Australia. Ms. Arnall referred Lindsay Falkov to several websites. 5/15: Lindsay Falkov followed up with Ms. Arnall and asked six very specific questions concerning strategic planning, performance indicators, monitoring systems, evaluation, MIS, and Performance/Management Contracts. Ms. Arnell never responded to these questions.
	Training Information Centre	INFORMATION@AFH.training.wa.gov.au	5/4: Lindsay Falkov asked Clive Timms for information on implementing skills development training in Australia. 5/9: Mr. Timms referred Lindsay Falkov to several websites.
	Small Business professional Development Office of Vocational Education and Training	Amdrew.Dare@Central.tased.edu.au	5/5: Lindsay Falkov asked Mr. Dare for information on lessons learnt from the small business development best practice programme in Australia and for the 1999 Evaluation Report. Mr. Dare said he would mail the 1998 report as the 1999 report was not yet ready. Lindsay Falkov never received the report.
	Framing the Future/TAFE	Brian.cramond@regency.tafe.sa.edu.au	5/5: Lindsay Falkov asked Mr. Cramond for information on monitoring and evaluation systems for skills development in Australia. Mr. Cramond sent Lindsay Falkov the 1998 evaluation and referred Lindsay Falkov to several websites. 5/14: Lindsay Falkov sent Mr. Cramond another e-mail with specific questions relation to strategic planning, performance indicators, monitoring systems, evaluation, performance/management contracts and MIS.
	Group Training, Australia	gta@gtaltd.com.au	5/4: Lindsay Falkov asked for information or contact names of those involved in the monitoring and evaluation of group training in Australia. No response was ever received.
		Jack.Cunningham@almitab.org.au	5/5: Lindsay Falkov asked for information on the experience of implementing the skills development programme in Australia. 5/14: Lindsay Falkov followed up with another e-mail asking specific questions in relation to strategic planning, performance indicators, monitoring systems, evaluation, performance/management contracts and MIS. 5/15: Mr. Cunningham responded that he has the information we requested but had to first check with his manager.
Botswana	Department of Labour	Ms. Seemule, Assistant Commissioner (267)361-1500 (Tel.) vseemule@hotmail.com	She did not respond to follow-up calls/messages after first phone call and e-mail message. Internet research indicates that Botswana does not have comparable programs.
Chile	Embassy of Chile, South Africa	(012) 342-1511 (Tel.) (012) 342-1658 (Fax)	Staff did not respond to any faxes/phone messages requesting information or contacts for similar programs in Chile.

Country	Organization	Contact	Comments / Status
Colombia	Embassy of Colombia, South Africa	(012) 342-0211 (Tel.)	Staff did not know of any programs in Colombia comparable to those in South Africa.
	Asesora Particular	Sonia Prieto soniaprieto@hotmail.com 57-1 5301580 (Tel.) (Bogotá)	
	SENA	Diego Martínez Arango Ex-funcionario SENA hdmartin@multi.net.co 57-1 6220964 (Bogotá) (Tel.)	Provided information on the SENA program
	SENA	Cecilia Romero SENA 57-1 2170177 (Bogotá) (Tel.)	Provided information on the SENA program
	Asociacion Nacional De Industiales (ANDI)	Gladys Turriago ANDI 57-1 2810600 (Bogotá) (Tel.)	Provided information on ANDI.
Czech Republic	Embassy of Czech Republic, South Africa	(012) 430-2328 (Tel.)	Staff did not know of any programs in Czech Republic comparable to those in South Africa.
Denmark	Centre for Labour Market and Social Research (CLS), University of Aarhus	Mr. Nils Westergaard, Research Director (45) 8942-2352 (direct line) (45) 8942-2350 (general #) (45) 8942-2365 (fax) nwn@cls.dk	4/30: He indicated willingness to help answer questions. Edward Brooke sent e-mail with analytic framework, and Nils' secretary confirmed receipt. 5/5: Mr. Westergaard asked that project team call him on Monday May 8 for discussion. 5/8: Lindsay Falkov called Mr. Westergaard twice, however he was not available. Lindsay Falkov sent him a fax with a number of questions. He never responded.
	University of Aarhus	Prof. Bo Sandemann Rasmussen, Department of Economics (45) 8613-6334 (Tel.) (45) 8942-1590 (Fax) brasmussen@eco.aau.dk	Referred Edward Brooke to Mr. Nils Westergaard

Country	Organization	Contact	Comments / Status
Dominican Republic	Association for Development	Emanuel Castillo Angel Rosario Fernando Capellan Can be contacted through: Kevin Murphy J.E. Austin Associates 703-841-9841 (Tel.) 703-841-9847 (Fax) KXMURPHY@aol.com	Provided information on INFOTEP
Honduras	Ascocian Honduran De Maquiladores	Henry Fransen Can be contacted through: Kevin Murphy J.E. Austin Associates 703-841-9841 (Tel.) 703-841-9847 (Fax) KXMURPHY@aol.com	Provided information on INFOP.
Hungary	Embassy of Hungary, South Africa	(012) 430-3030 (Tel.)	Staff did not know of any programs in Hungary comparable to those in South Africa.
Latin America		Claudio Castro 202-623-3767 (Tel.)	Provided information on training programs in education in Latin America.
		Caroline Fawcett fawcett@american.edu 301-951-9286	Provided overview of Latin American skills development programs.
		German Castillo Bernal c0castia@colseguros.com alejocastillo@hotmail.com (57) 1 257-0736 (57) 1 619-7770	Provided overview of Latin American skills development programs.
		Ruth Anne Deutch 202-623-2406 (Tel.)	Provided overview of Latin American skills development programs.

Country	Organization	Contact	Comments / Status
Latin America		Andrew Morrison 202-623-1763 (Tel.)	Provided overview of Latin American skills development programs.
		Bill Savedoff 202-623-1932 (Tel.)	Provided information on training programs in health in Latin America.
Malaysia	Human Resources Development Group	Mr. Yau-De Piyau (Mr. Yau) (60-3) 258-4800 yau@hrdnet.gov.my	5/2: Edward Brooke sent e-mail with analytical framework. 5/5: Edward Brooke had short conversation with Mr. Yau, who said he would look into the availability of studies of Malaysia's skills development programs. He did not respond to later calls/e-mails.
	University of Leicester	Dr. David Ashton Professor of Sociology and Director of the Centre for Labour Market Studies Univ. of Leicester 0116 252 5950 (Tel); 0116 252 5953 (Fax) david.ashton@leicester.ac.uk	4/27: Dr. Ashton a photocopy of a graduate student's study of Malaysian skills development for an "administrative charge" of 300 pounds. We did not take him up on this offer, as the cost of the study exceeded its worth.
	Lancaster University	Geraint Johnes 44 1524 594215 (Tel.) 44 1524 594244 (Fax) G.Johnes@lancaster.ac.uk	Referred us to his colleague, Zafiris Tzannatos with whom he wrote an article on East Asian Skills Development
	World Bank	Zafiris Tzannatos (Tel.) 202-473-3280 ptzannatos@worldbank.org	Did not respond to e-mail inquiry on his work on skills development in East Asia.
Namibia	Ministry of Higher Education, Vocational Training, Science & Technology	M. Ndjoze, Director of Vocational Training Mndjoze@mhevtst.gov.na (264-61)270-6245/ 270-6223	They have been considering a skills development program, but to date nothing has been agreed on or implemented.
New Zealand	New Zealand Qualifications Authority (NZQA)	Brent Richardson (64-4) 802-3045 BrentR@nzqa.govt.nz	5/1: Said he is willing to help. He has received our analytical framework and will send us relevant information.

Country	Organization	Contact	Comments / Status
New Zealand	Skill New Zealand	Margaret Griffin (64-4) 382-2850 margaret.griffin@skillnz.govt.nz Anna Pasikale anna.pasikale@skillnz.govt.nz Alistair Stewart alistair.stewart@skillnz.govt.nz Vivienne Boyd vivienne.boyd@skillnz.govt.nz	4/30: Anna Pasikale gave a basic description of how Skill NZ is set up. Edward Brooke sent her an e-mail asking for details on contract between Skill NZ and Ministries of Education and Employment. 5/14: Lindsay Falkov asked them for information on specific questions in relation to strategic planning, performance indicators, monitoring systems, evaluation, performance/management contracts and MIS.
	New Zealand Association for Training and Development	ellicon@xtra.co.nz	4/5: Lindsay Falkov asked Phillippa Eliott for information on experience of implementing the skills development programme.
Romania	Embassy of Romania, South Africa	Mr. Florin Barbu (012) 346-1564 (Tel.) (012) 460-6947 (Fax) florinbarbu@usa.net romembsa@global.co.za	4/15: Said that there was nothing similar in Romania.
Slovak Republic	Embassy of Slovak Republic, South Africa	Office of the Ambassador (012) 342-2052 (Tel.) (012) 342-3688 (Fax)	4/15: No response, but research indicated that there have been no comparable programs in Slovak Republic.
Sweden	IFAU	Sara Martinson sara.martinson@ifau.uu.se	5/1: She responded to e-mail from Edward Brooke. She is willing to talk about Swedish skills development generally or in IT training, which is her specialty. Edward Brooke sent her our analytic framework and needs to follow up. 5/5: She sent information on skills development programs in the IT sector.
United Kingdom	Oxfordshire Adult Basic Skills Unit	Ms. Joya Banerjee, County ESOL Adviser (01865) 778827 (Tel.) adultbsu@rmplc.co.uk	Had little information to offer. Explained how the county-level training centers didn't keep track of data for national skills development. She didn't know who would have data on skills development at a national level.

Country	Organization	Contact	Comments / Status
Zambia	World Bank	Amit Dar Human Resource Network Special Programs Vocational Training (Tel.) 202-473-3430 Adar@worldbank.org	He sent us an unpublished copy of research on Zambia's skills development programs for our own reference.
Worldwide	USAID/Washington	Robert McClusky Rm 3.09-081, G/HCD, USAID 1300 Pennsylvania Ave., NW Washington, D.C. 20523-3901 (Tel) 202-712-5414; (Fax) 202-216-3229 rmcclusky@usaid.gov	Sent us copies of case studies of about 20 skills development and training programs worldwide.
	World Bank	Mr. Hong Tan Private Sector Development Business Environment 202-473-3206 htan@worldbank.org	Sent us copies of case studies of skills development and training programs worldwide, and a World Bank publication on Malaysian skills development.